

**Disposal and Reuse of
Fleet and Industrial Supply Center, Oakland
Vision 2000 Maritime Development**

**Final
Environmental Impact Statement/
Environmental Impact Report**

SCH #96062010



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DTIC QUALITY INSPECTED 2

FLEET AND INDUSTRIAL SUPPLY CENTER, OAKLAND
and
PORT OF OAKLAND, CALIFORNIA

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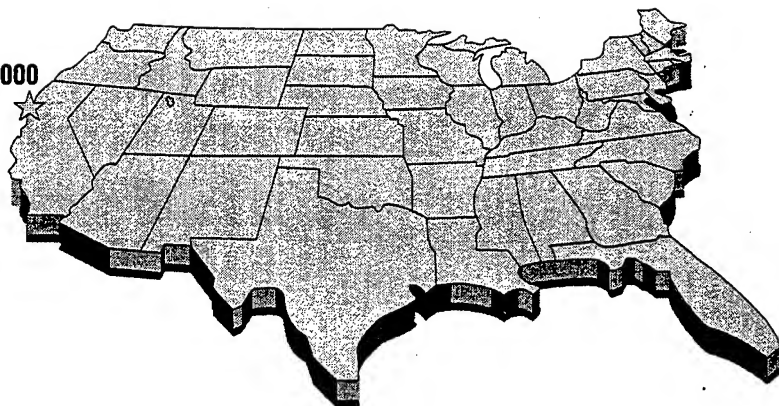
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FISCO/Vision 2000



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APPENDIX A: Visual Resources on Site

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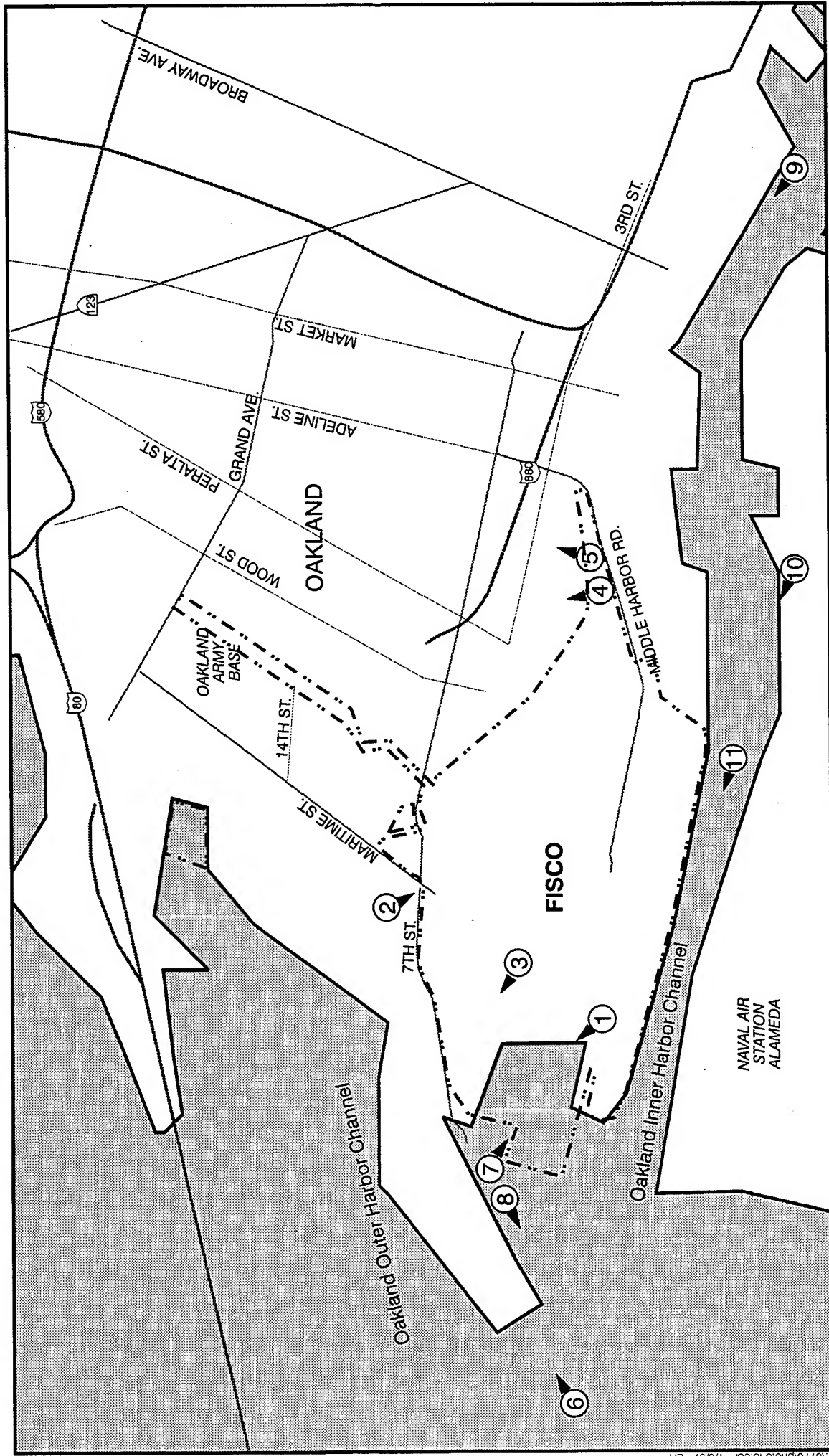


Photo-Location Map

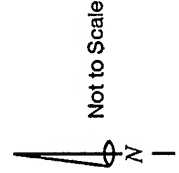
Port of Oakland



LEGEND:

① Photopoint Locations

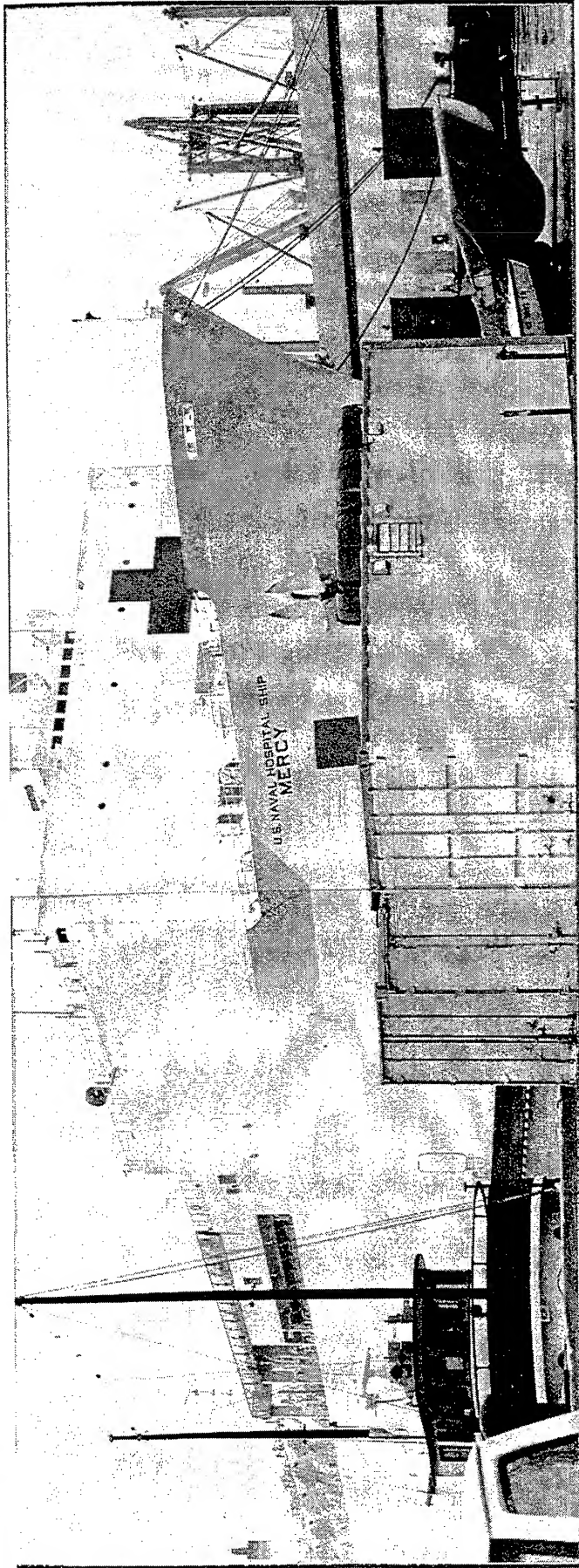
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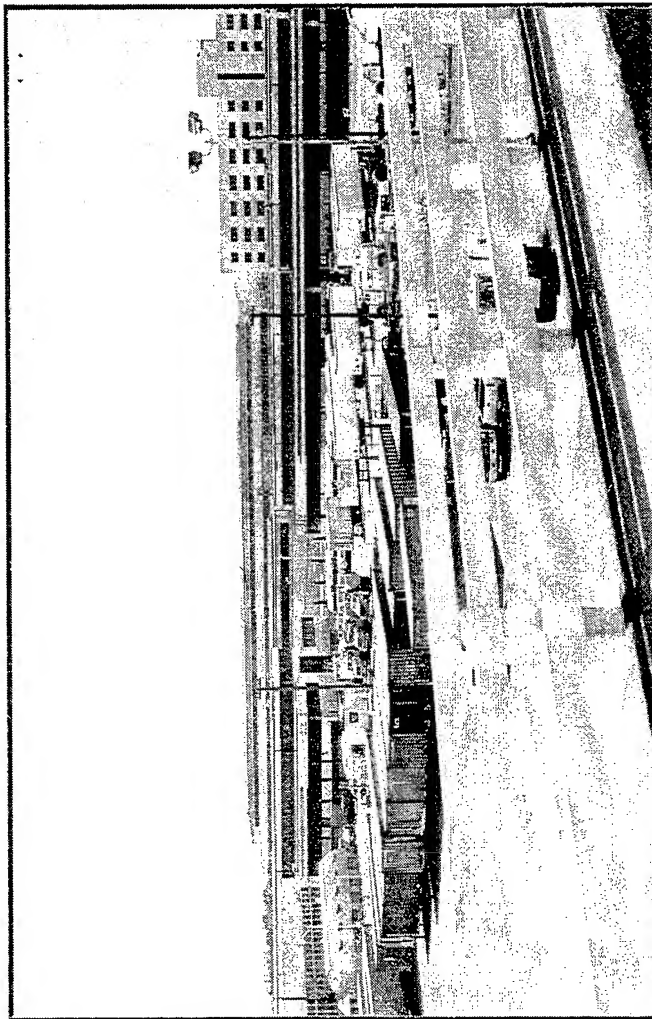
Fleet & Industrial Supply Center Oakland
and Port of Oakland

Figure A-1

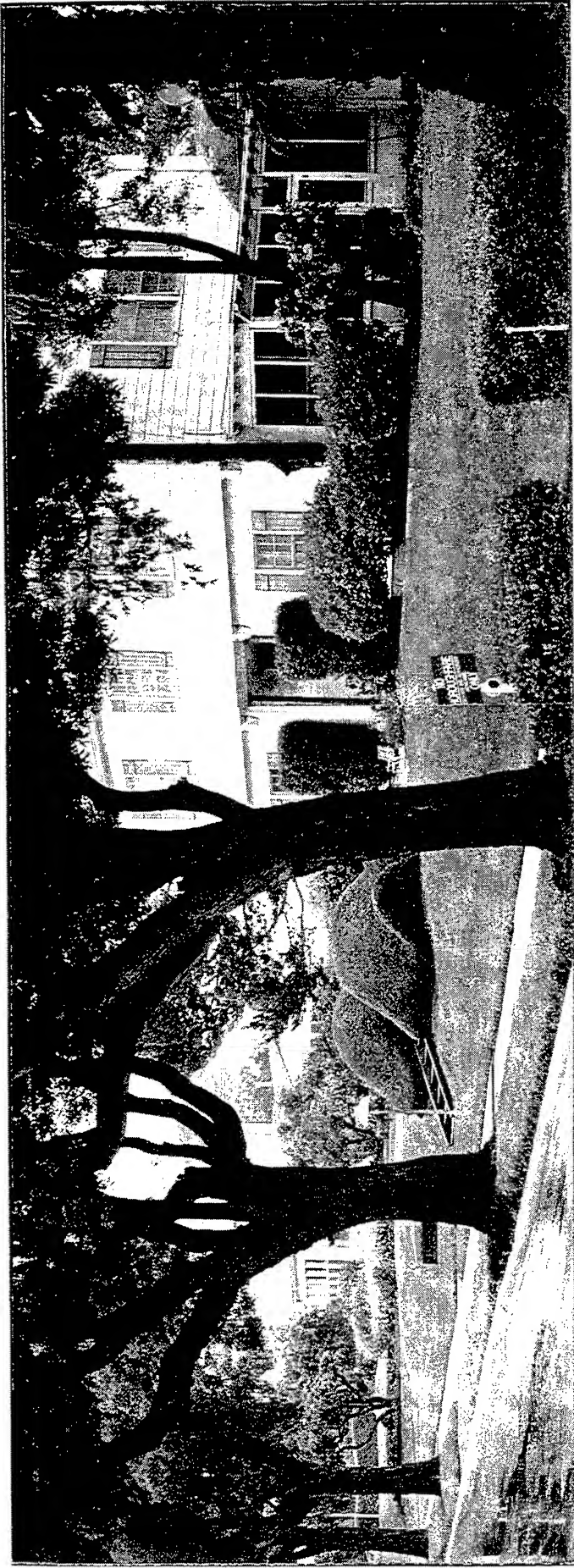
Source: BCDC 1969; MTC 1996



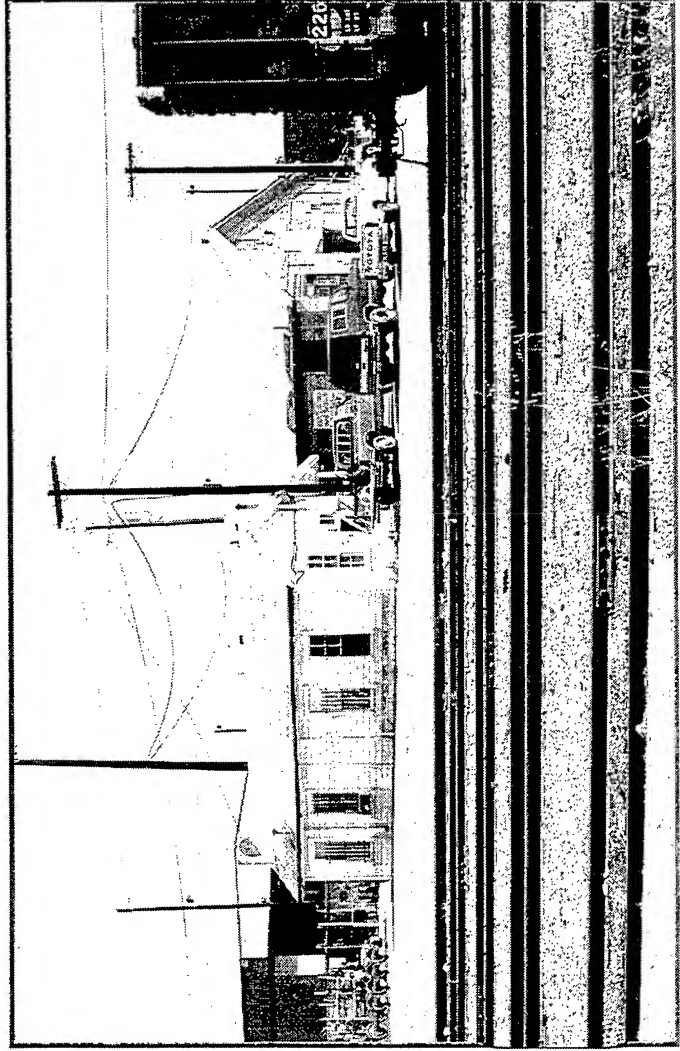
1. USNS Mercy Berthed at FISCO's East Marginal Warf



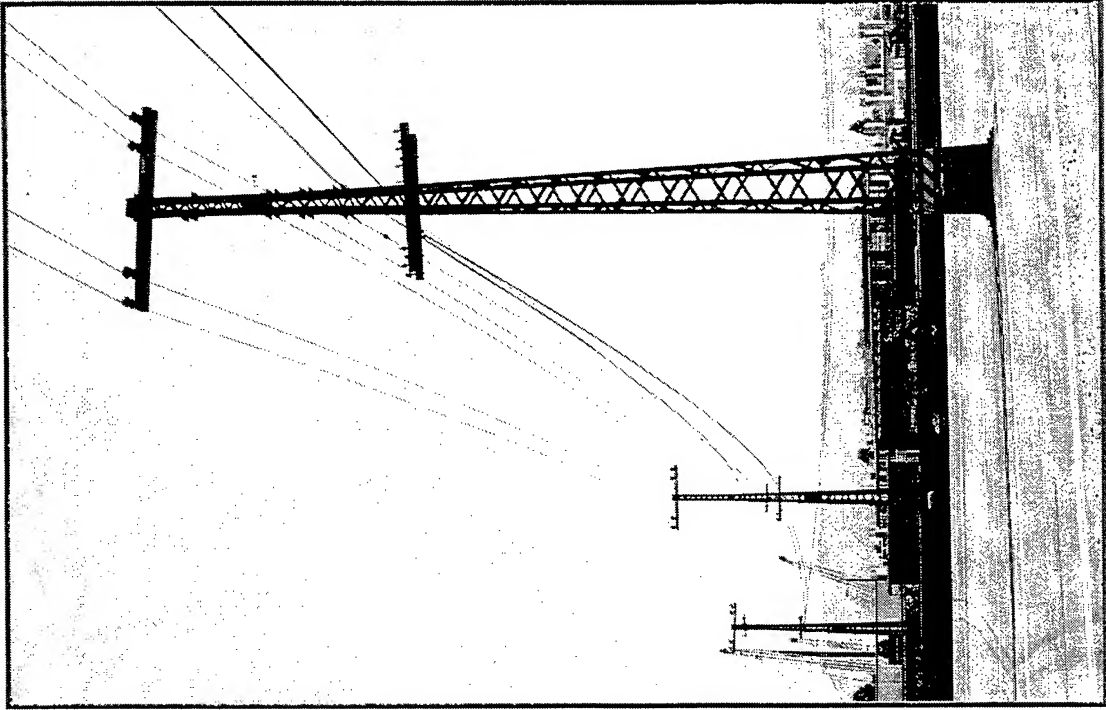
2. FISCO Main Warehouse Area



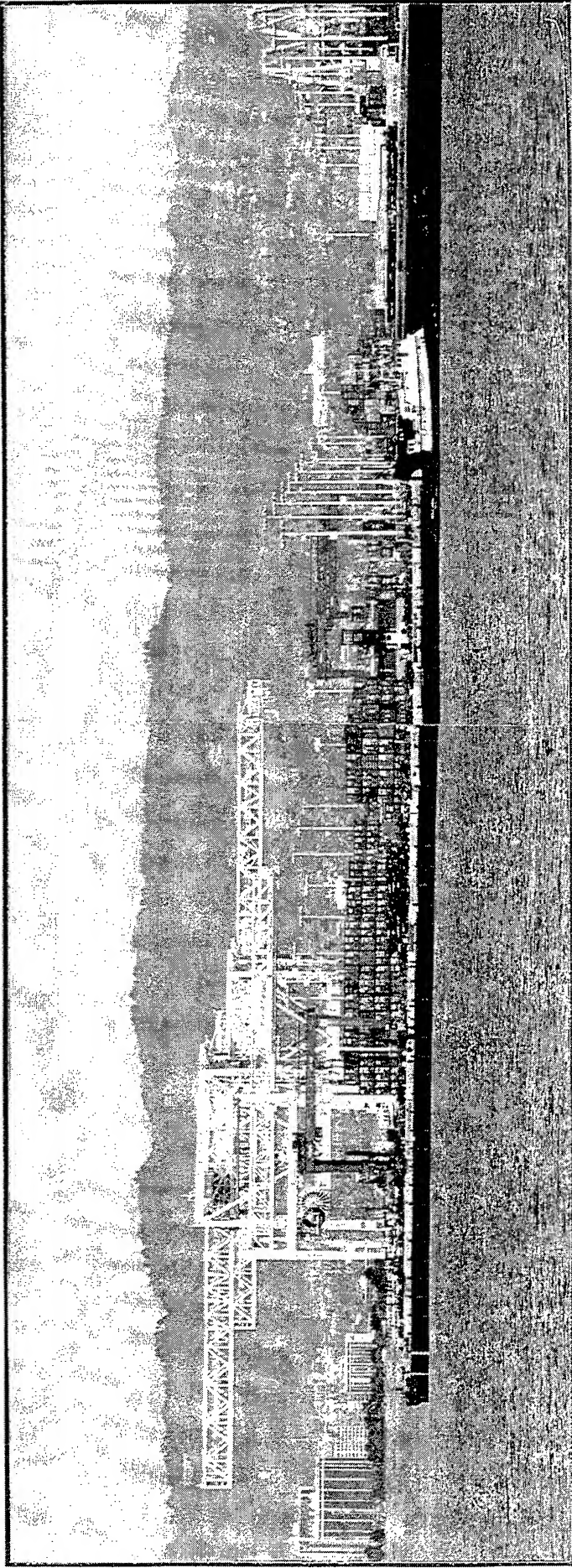
3. FISCO Officer's Housing Area



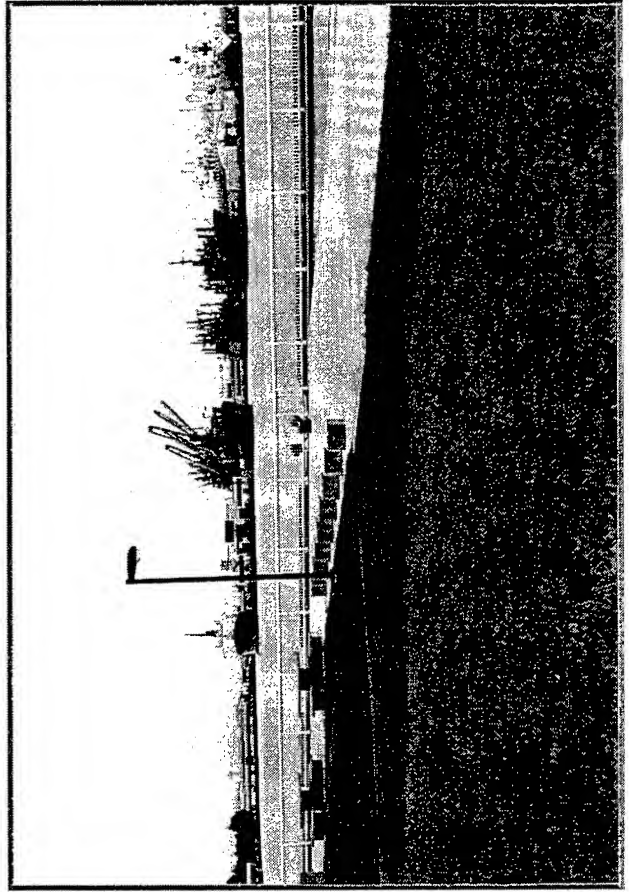
4. Older Buildings in the Southern Pacific Yard



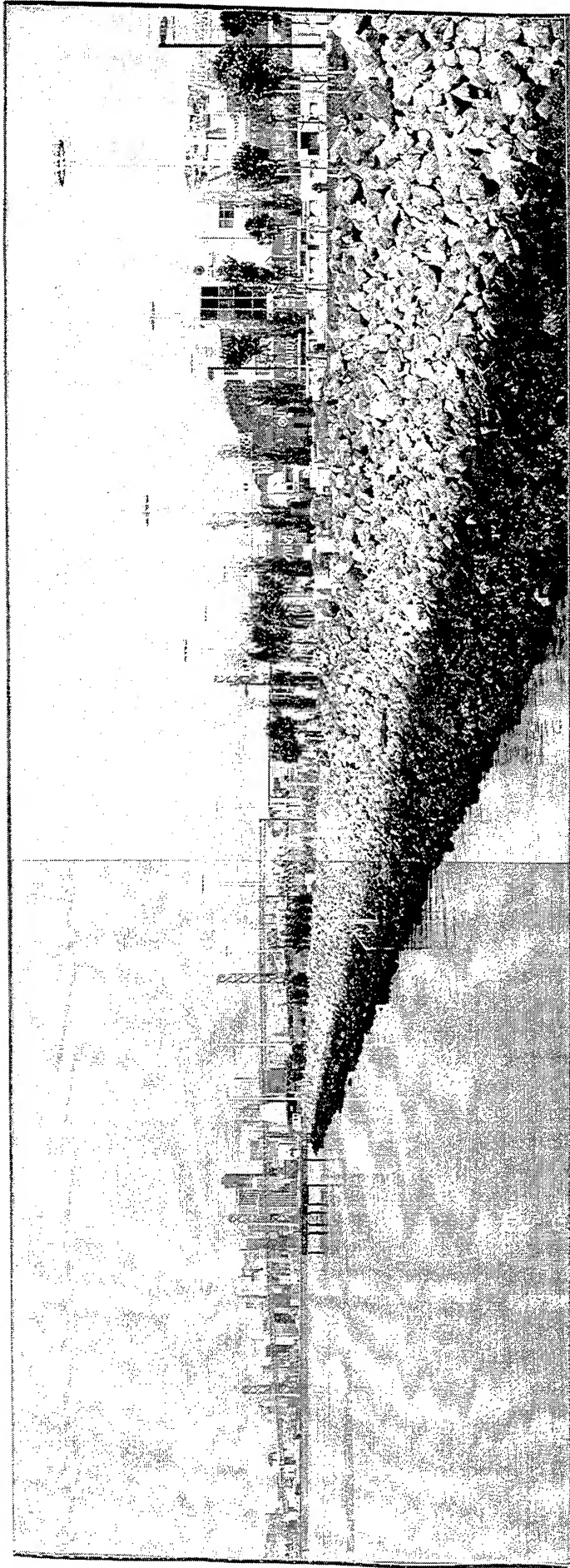
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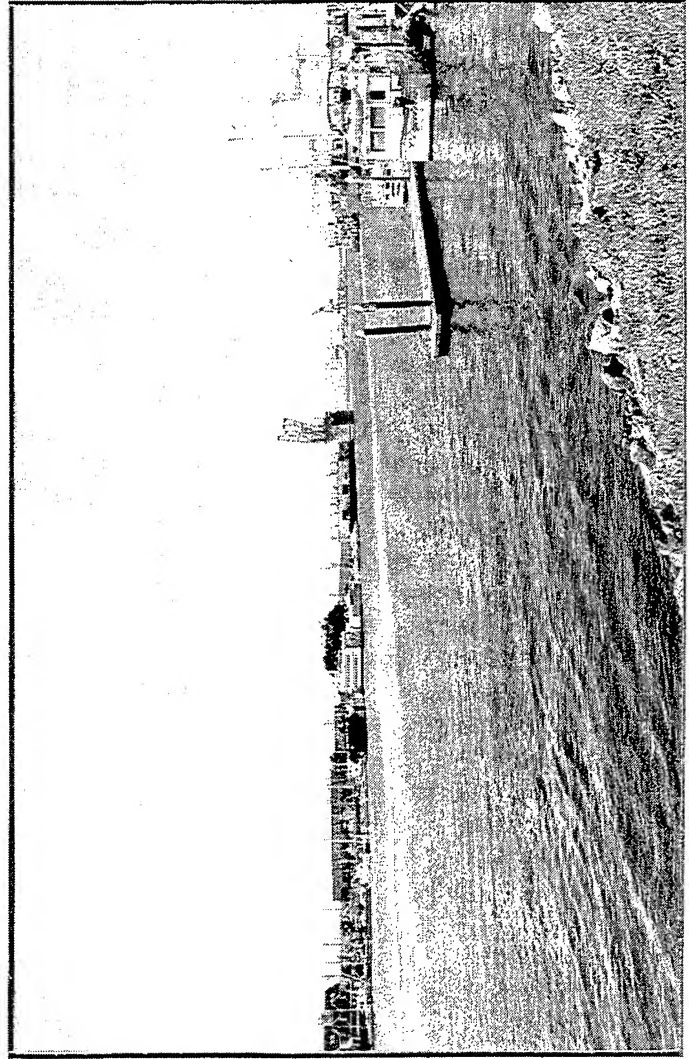
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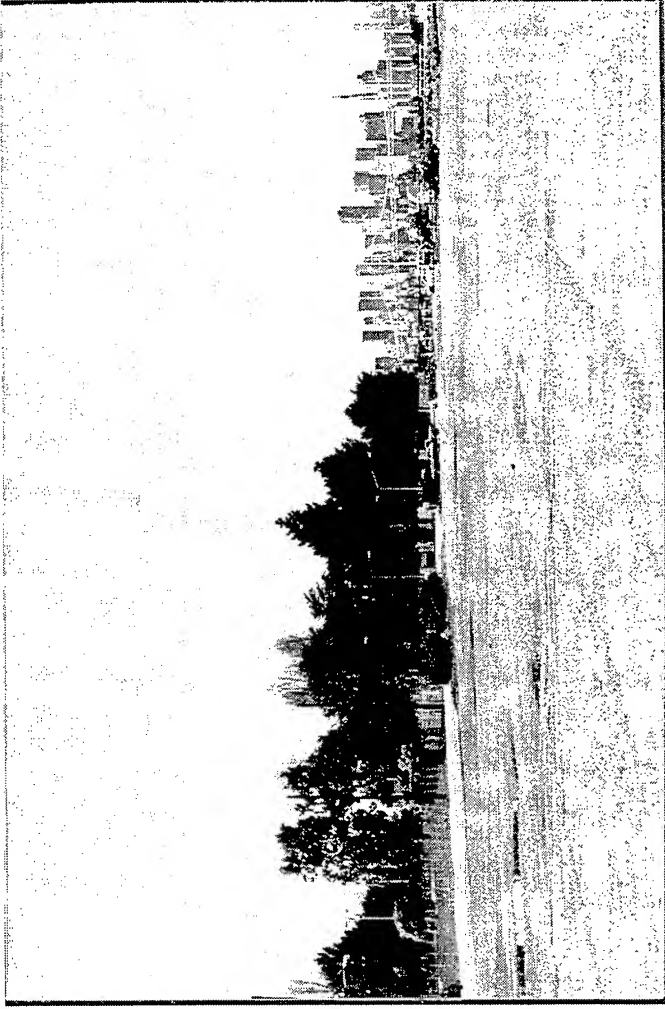
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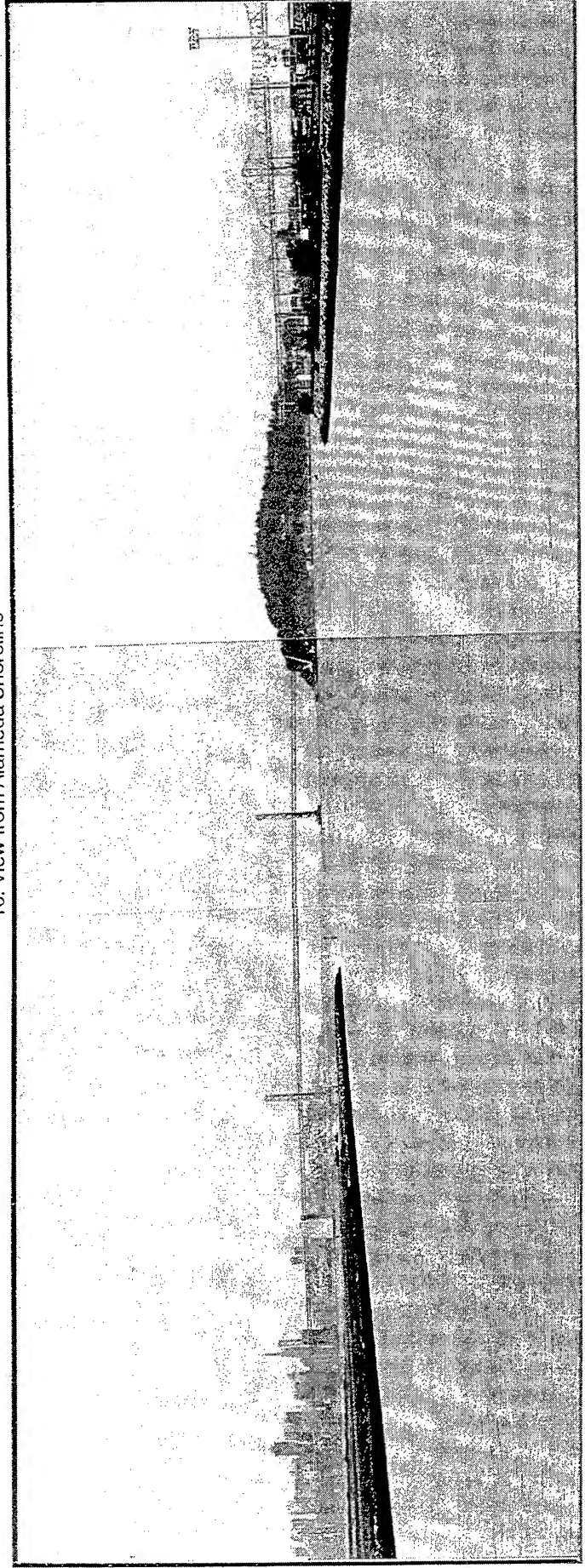
8. View from Port View Park Towards San Francisco



9. View from Jack London Village



10. View from Alameda Shoreline



11. Panoramic View of San Francisco and Bay Bridge (seen from Oakland)

Appendix B

Special Legislation Relating to FISCO

B.1. DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION FINDINGS AND RECOMMENDATIONS

The Secretary of Defense, in compliance with Public Law 101-510, as amended, officially transmitted his recommendations for base closures and realignments to the Defense Base Closure and Realignment Commission on February 28, 1995. The Commission held 13 investigation hearings, conducted 206 fact-finding visits to 167 military installations and activities, held 16 regional hearings nationwide, listened to hundreds of Members of Congress, and received hundreds of thousands of letters from concerned citizens from across the country. By June 22, 1995, the Defense Base Closure and Realignment Commission had completed its review and analysis of the Secretary's recommendations, and began its final, two days of deliberations, all in public.

Information on the Commission's base closure and realignment decision for the Fleet and Industrial Supply Center, Oakland is presented below. The paragraph entitled "Secretary of Defense Recommendations" was taken verbatim from the *Department of Defense Base Closure and Realignment Report* dated March 1995. The paragraph entitled "Community Concerns" provide a brief summary of arguments presented to the Commission by local communities; they are not all-inclusive.

Fleet and Industrial Supply Center, Oakland, California

Category:	Fleet and Industrial Supply Centers
Mission:	Supply Support
One-time Cost:	\$23.0 million
Savings:	1996-2001: \$29.7 million
Annual:	\$12.6 million
Return on Investment:	1999 (Immediate)
FINAL ACTION:	Close

Secretary of Defense Recommendation

None. The Commission added this military installation to the list of bases to be considered by the Commission for closure or realignment as a proposed change to the list of recommendations submitted by the Secretary of Defense.

Community Concerns

FISC is located in three jurisdictions: Oakland, Alameda, and Richmond, California. Alameda and Richmond would like to have the land in their cities closed under base closure rules, which would expedite the land transfer. Initially, Oakland was concerned that any base closure action would prevent implementation of special legislation authorizing the Secretary of the Navy to sign long-term leases with the City of Oakland, the Port of Oakland, and the City of Alameda for \$1. The Port of Oakland and the Navy recently signed leases for two parcels of FISC land. The Port was originally concerned that closure of FISC as a BRAC action would delay their large port development plan. The Port recognized that closure would allow the Port to acquire the land and would not interfere or prevent ongoing lease negotiations.

Commission Findings

The Secretary of the Navy removed FISC Oakland from the list of recommendations presented to him because of excessive job losses in California. The Commission added FISC Oakland for consideration. The Commission found employment levels and workload at FISC decreasing as the bases it supported were closed. FISC's primary function would be to operate office space for Government tenants.

The Commission agreed with the Richmond and Alameda communities that the closure of FISC land in their communities would facilitate transfer to the land. To clarify that these were distinct parcels of land the Commission addressed these parcels in a separate closure motion. The Commission and the Oakland community ultimately agreed that the closure of the main FISC compound in Oakland would not interfere with their ongoing lease negotiations or previously signed leases, and would facilitate transfer of the property. The proposed closure actions received the endorsement of the Port of Oakland and the mayors of Oakland, Alameda, and Richmond. The Commission also found that additional savings would result if the two major tenants at FISC, Military Sealift Command and Defense Finance and Accounting Service, move to other Government-owned space.

Commission Recommendation

The Commission finds the Secretary of Defense deviated substantially from final criteria 5 and 6. Therefore, the Commission recommends the following: realign the Fleet and Industrial Supply Center, Oakland. Close Point Molate Naval Refueling Station, Richmond, California. Close Navy Supply Annex, Alameda, California. The Commission finds this recommendation is consistent with the force-structure plan and final criteria.

Commission Recommendation II

The Commission finds the Secretary of Defense deviated substantially from final criteria 5 and 6. Therefore, the Commission recommends the following: close the Fleet and Industrial Supply Center, Oakland. Relocate Defense Finance and Accounting Service and Military Sealift Command to Government-owned space. The Commission finds this recommendation is consistent with the force-structure plan and final criteria.

B.2. P.L. 102-484 SEC. 2834 (OCTOBER 23, 1992)**SEC. 2834. LEASES OF PROPERTY, NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA.****(a) LEASE AUTHORIZED WITH UNION PACIFIC RAILROAD COMPANY—**

- (1) The Secretary of the Navy may lease to the Union Pacific Railroad Company (in this subsection referred to as the "Company") not more than 15 acres of real property, together with improvements thereon, located at the Naval Supply Center, Oakland, California.

- (2) The lease authorized in paragraph (1) shall—
 - (A) be for an initial period of not more than 25 years;
 - (B) contain an option for the Company to extend the lease for an additional period of not more than 25 years; and
 - (C) contain the restriction that the Company use the leased property only for freight transportation purposes.
- (3) (A) As consideration for the lease of the real property under paragraph (1), the Company—
 - (i) shall pay to the Navy the long-term fair market rental value of the leased property; and
 - (ii) may be required to furnish additional consideration as provided in subparagraph (B).
 (B) The Secretary may require that the lease include a provision for the Company—
 - (i) to pay the Navy an amount (as determined by the Secretary) for the costs of replacing at the Naval Supply Center, Oakland, California, the facilities vacated by the Navy on the leased property or to construct the replacement facilities for the Navy; and
 - (ii) to pay the Navy an amount (as so determined) for the costs of relocating Navy operations from the vacated facilities ties to the replacement facilities.
- (4) (A) Section 2667(d) of the title 20, United States Code, shall apply to amounts paid under paragraph (3)(A)(i).
 (B) The Secretary may use amounts received under paragraph (3)(B) to pay for constructing new facilities, or making modifications to existing facilities, that are necessary to replace facilities vacated by the Navy on the leased property and for relocating operations of the Navy from the vacated facilities to the replacement facilities.
- (5) The Secretary may authorize the Company to demolish existing facilities on the leased property and, consistent with the restriction required by paragraph (2)(C), construct new facilities on the property for the use of the Company.
 - (b) LEASE AUTHORIZED WITH CITY OR PORT OF OAKLAND—
 - (1) The Secretary of the Navy may lease to the City of Oakland, California, or the Port of Oakland, California (in this subsection referred to as the “City” and the “Port”, respectively), not more than 195 acres of real property, together with improvements thereon, located at the Naval Supply Center, Oakland, California.
 - (2) The lease authorized under paragraph (1) shall—
 - (A) be for a term of not more than 50 years; and
 - (B) shall contain the restriction that the City or the Port (as the case may be) use the leased property in a manner consistent with Navy operations conducted at the Naval Supply Center.
 - (3) (A) As consideration for the lease of the real property under paragraph (1), the City or the Port (as the case may be)—
 - (i) shall pay to the Navy the long-term fair market rental value of the leased property; and
 - (ii) may be required to furnish additional consideration as provided in subparagraph (B).
 - (B) The Secretary may require that the lease include a provision for the City or the Port (as the case may be)—
 - (i) to pay the Navy an amount (as determined by the Secretary) for the costs of replacing at the Naval Supply Center, Oakland, California, the facilities vacated by the Navy on the leased property or to construct the replacement facilities for the Navy; and
 - (ii) to pay the Navy an amount (as so determined) for the costs of relocating Navy operations from the vacated facilities to the replacement facilities.

- (4) The Secretary may not enter into the lease authorized by paragraph (1) until 21 days after the date on which the Secretary submits to the Committees on Armed Services of the Senate and House of Representatives a report containing an explanation of the terms of the proposed lease and a description of the consideration that the Secretary expects to receive under the lease.
- (5) (A) The Secretary may use amounts paid under paragraph (3)(A)(i) to pay for improvement, maintenance, repair, construction, or restoration activities at the Naval Supply Center, Oakland, California.
- (B) The Secretary may use amounts received under paragraph (3)(B) to pay for constructing new facilities, or making modifications to existing facilities, that are necessary to replace facilities vacated by the Navy on the leased property and for relocating operations of the Navy from the vacated facilities to the replacement facilities.
- (6) The Secretary may authorize the City or the Port (as the case may be) to demolish existing facilities on the leased property and, consistent with the restriction required by paragraph (2)(B), construct new facilities on the property for the use of the City or the Port.
- (c) ADDITIONAL TERMS.— The Secretary may require such additional terms and conditions in connection with the leases authorized under this section as the Secretary considers appropriate to protect the interests of the United States.
- (d) REPEAL OF SUPERSEDED AUTHORITY.— Section 2338 of the National Defense Authorization Act for Fiscal Years 1988 and 1989 (Public Law 100-180; 101 Stat. 1225) is repealed.

B.3. P.L. 103-160 SEC. 2833 (NOVEMBER 30, 1993)

SEC. 2833. MODIFICATION OF LEASE AUTHORITY, NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA

- (a) EXPANSION OF LEASE AUTHORITY.— Paragraph (1) of subsection (b) of section 2834 of the Military Construction Authorization Act for Fiscal Year 1993 (division B of Public Law 102-484; 106 Stat. 2614) is amended by striking out “not more than 195 acres of real property” and all that follows through the period and inserting in lieu thereof “those portions of the Naval Supply Center, Oakland, California, that the Secretary determines to be available for lease.”
- (b) CONSIDERATION.— Paragraph (2) of such subsection is amended—
 - (1) by striking out “and” at the end of subparagraph (A);
 - (2) by striking out the period at the end of subparagraph (B) and inserting in lieu thereof “; and”; and
 - (3) by adding at the end the following new subparagraph: “(C) be for nominal consideration.”
- (c) CONFORMING AMENDMENTS.— Such subsection is further amended—
 - (1) in paragraph (2)(B), by striking out “shall”;
 - (2) by striking out paragraphs (3), (4), and (5); and
 - (3) by redesigning paragraph (6) as paragraph (3).

B.4. P.L. 103-337 SEC. 2821 (OCTOBER 5, 1994)**SEC. 2821. ADDITIONAL LESSEE OF PROPERTY AT NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA.**

Section 3834(b) the Military Construction Authorization Act for Fiscal Year 1993 (division B of Public Law 102-484; 106 Stat. 2614) is amended—

- (1) in paragraph (1)—
 - (A) by striking out “City” the second place it appears and inserting in lieu thereof “Cities”; and
 - (B) by inserting “the City of Alameda, California,” after “California,” the first place it appears; and
- (2) in paragraphs (2) and (3), by striking out “City” each place it appears and inserting in lieu thereof “Cities.”

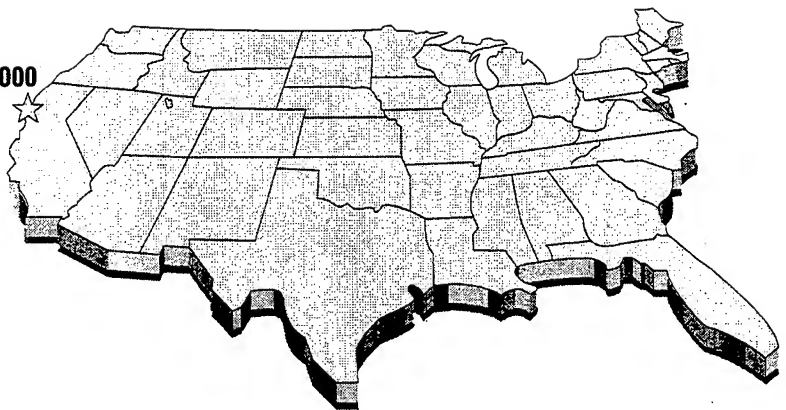
B.5. P.L. 104-106 SEC. 2867 (FEBRUARY 10, 1996)**SEC. 2867. LAND CONVEYANCE ALTERNATIVE TO EXISTING LEASE AUTHORITY, NAVAL SUPPLY CENTER, OAKLAND, CALIFORNIA**

Section 2834(b) of the Military Construction Authorization Act for Fiscal Year 1993 (division B of Public Law 102-484; 106 Stat. 2614), as amended by section 2833 of the Military Construction Authorization Act for Fiscal Year 1994 (division B of Public Law 103-160; 107 Stat. 1896) and section 2821 of the Military Construction Authorization Act for Fiscal Year 1995 (division B of Public Law 103-337; 108 Stat. 3057), is further amended by adding at the end the following new paragraphs:

- “(4) In lieu of entering into a lease under paragraph (1), or in place of an existing lease under that paragraph, the Secretary may convey, without consideration, the property described in that paragraph to the City of Oakland, California, the Port of Oakland, California, the City of Alameda, California, or the City of Richmond, California, under such terms and conditions as the Secretary considers appropriate.
- “(5) The exact acreage and legal description of any property conveyed under paragraph (4) shall be determined by a survey satisfactory to the Secretary. The cost of each survey shall be borne by the recipient of the property.”

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FISCO/Vision 2000



APPENDIX C
FINAL SECTION 4(f) EVALUATION/
BCDC BAY PLAN POLICIES

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Appendix C

Final Section 4(f) Evaluation/ BCDC Bay Plan Policies

C.1 FINAL SECTION 4(F) EVALUATION

INTRODUCTION

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303, declares that "[i]t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that "[t]he Secretary of [Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area refuge, or site) only if:

- (1) there is no prudent and feasible alternative to using that land; and
- (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."

In general, a section 4(f) "use" occurs with a Department of Transportation-approved project or program when (1) section 4(f) land is permanently incorporated into a transportation facility; (2) when there is a temporary occupancy of section 4(f) land that is adverse in terms of the section 4(f) preservationist purposes as determined by specified criteria (23 CFR 771.135 [p] [7]); and (3) when section 4(f) land is not incorporated into the transportation project, but the project's proximity impacts are so severe that the protected

activities, features, or attributes that qualify a resource for protection under section 4(f) are substantially impaired (constructive use).

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development in developing transportation projects and programs that use lands protected by section 4(f).

The FHWA will use this section 4(f) evaluation in their decision-making process for granting Intermodal Surface Transportation Efficiency Act (ISTEA) project funding for the Port's Vision 2000 Program for constructing a joint intermodal terminal (JIT). The FHWA and the Port have consulted with the public agencies having jurisdiction over the 4(f) resources in the project area during the assessment of impacts and the development of measures to minimize harm.

PROPOSED ACTION

In response to the recognized need to increase capacity and to improve efficiency of integrated intermodal cargo transportation services, the Port of Oakland has developed the Vision 2000 Program. This program is a schedule of phased improvements and development projects to modernize and expand the Port's facilities. The Vision 2000 Program involves reuse and development of the US Navy's Fleet and Industrial Supply Center Oakland (FISCO), formerly known as the Naval Supply Center, located in West Oakland, as well as 290 acres beyond the FISCO property boundaries.

Chapter 1, Purpose and Need, Section 1.3, pages 1-3 and 1-6 in Volume I of this EIS/EIR explains the applicable conditions affecting ownership of the FISCO property. In summary, as a result of this project, a portion of FISCO may be conveyed in fee to the Port through special legislation, allowing the Secretary of the Navy to convey the nonreversionary portion of FISCO to the Port. The remainder of FISCO may be conveyed by a reversionary clause in the deed of trust for FISCO. Pending final closure of FISCO, the Port is leasing portions of FISCO from the Navy. Chapter 2, Section 2.2.5, pages 2-10 and 2-12, describes the various geographic components that comprise the Port's Vision 2000 Program.

The Vision 2000 Program consists of three common elements: JIT, marine terminals, and public waterfront access and marine habitat enhancement (see Chapter 2, Section 2.2.3, Common Elements of Port Reuse Alternatives, pages 2-5 and 2-6 in Volume I). The environmental consequences associated with full buildout of all three Vision 2000 elements by 2010 are evaluated in Chapter 5 of Volume I.

The following four Vision 2000 Program alternatives are evaluated in Volume I:

- Maximum Marine/Maximum Rail;

- Minimum Marine/Minimum Rail;
- Maximum Marine/Minimum Rail; and
- Reduced Harbor Fill (Preferred Alternative).

These four alternatives represent variations on the design and configuration of the Vision 2000 Program components, including the JIT. Table 2-3 in Volume I of this EIS/EIR provides an overview of facilities and other operations features of the four JIT alternatives. These four alternatives were configured to represent a range of potential impacts to different resources. For example, rail track storage on the Oakland Army Base property is included for only one of the four alternatives. Similarly, although both the Maximum Marine/Maximum Rail and Reduced Harbor Fill Alternatives would serve both Southern Pacific/Union Pacific and Burlington Northern-Santa Fe railroads, the Reduced Harbor Fill Alternative is configured in a manner that avoids impacts to one of the historic districts in the project area.

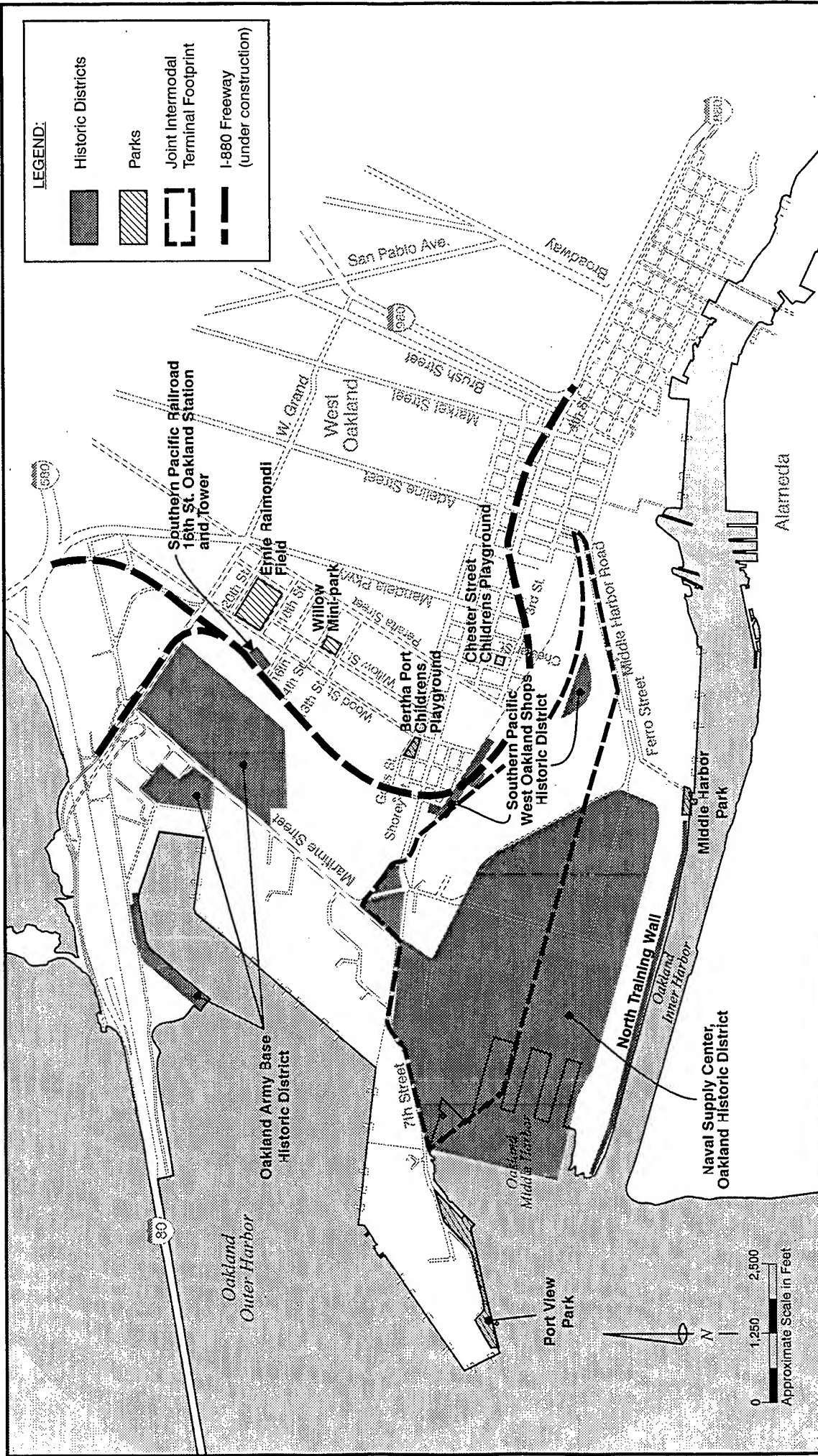
A detailed discussion of the reasons why the four Vision 2000 Program alternatives were selected is described in Chapter 2, Alternatives, Including the Proposed Action, Section 2.2.2, pages 2-3 and 2-5 in Volume I of this EIS/EIR. The maximum JIT footprints proposed under these four alternatives are presented on Figures C-1, C-2, C-3, and C-4. The Port's preferred alternative is the Reduced Harbor Fill Alternative.

The purpose of the JIT is to expand and improve the existing intermodal operations of the Southern Pacific and Union Pacific Railroads in Oakland, California, and to provide access for the international segment of the Burlington Northern-Santa Fe Railroad business currently handled in Richmond, California, approximately 17.7 km (11 miles) north of the Port area. All three Vision 2000 elements are separate and independent of one another. Therefore, because the JIT would provide efficient rail access to existing Port terminals in the Oakland Inner and Outer Harbors, its successful implementation does not depend on construction and operation of the new marine terminals proposed as part of the Vision 2000 Program.

The Metropolitan Transportation Commission (MTC) has authorized ISTEA funding for the JIT. To prepare the property after acquisition, a large number of structures must be demolished, utilities relocated and constructed, grading undertaken, and several roadways constructed. The MTC has authorized funds placed in the State Transportation Improvement Program (TIP) through ISTEA for seven million dollars for JIT construction.

SECTION 4(F) PROPERTY

The only section 4(f) resource used by the preferred Reduced Harbor Fill Alternative is the Naval Supply Center, Oakland (NSCO) Historic District.



Section 4(f) Parklands and Historic Resources Maximum Marine/Maximum Rail Alternative

Fleet & Industrial Supply Center Oakland
and Port of Oakland

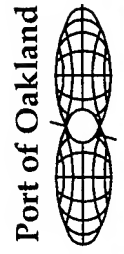
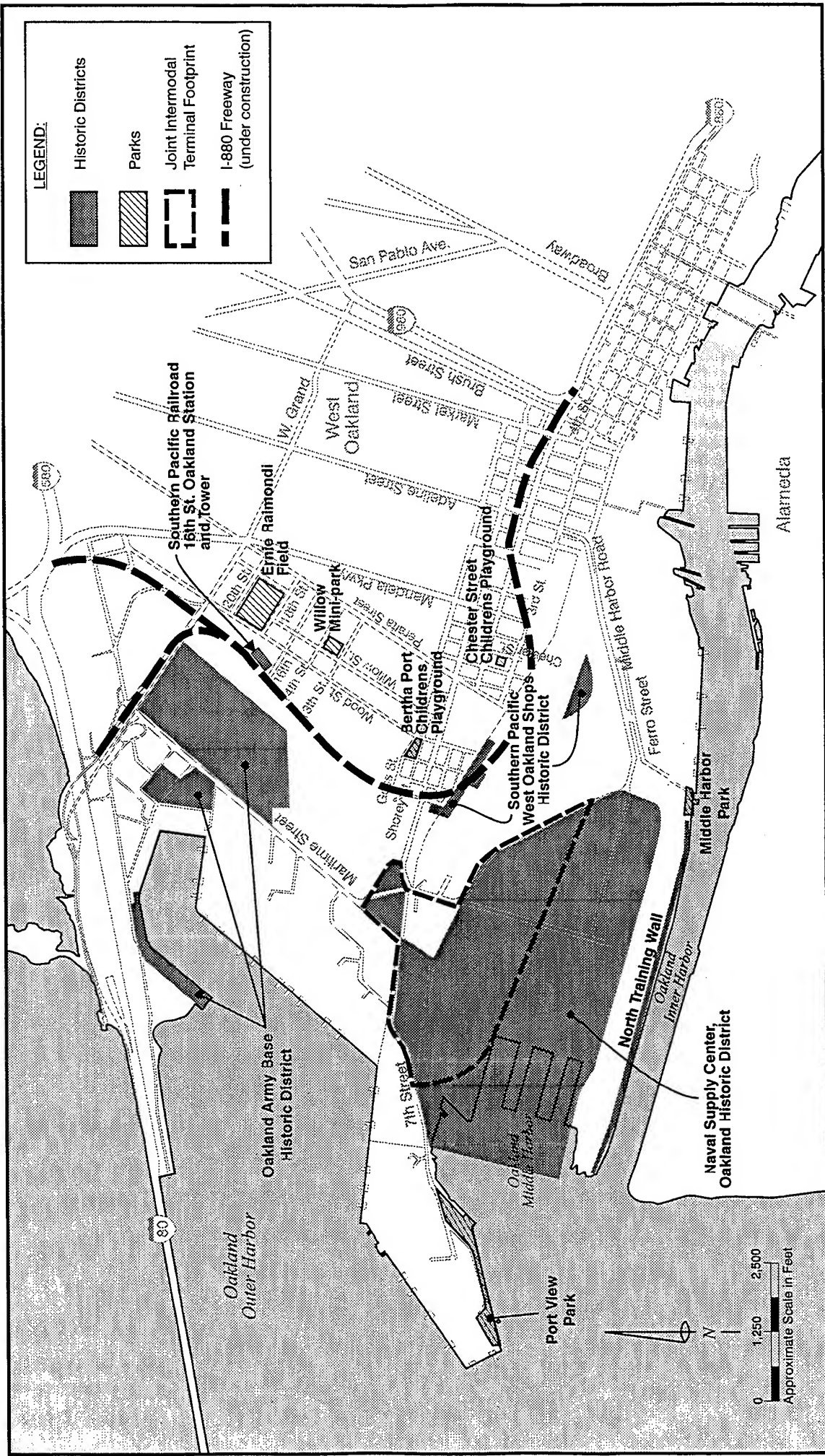


Figure C-1





Source: Port of Oakland 1996

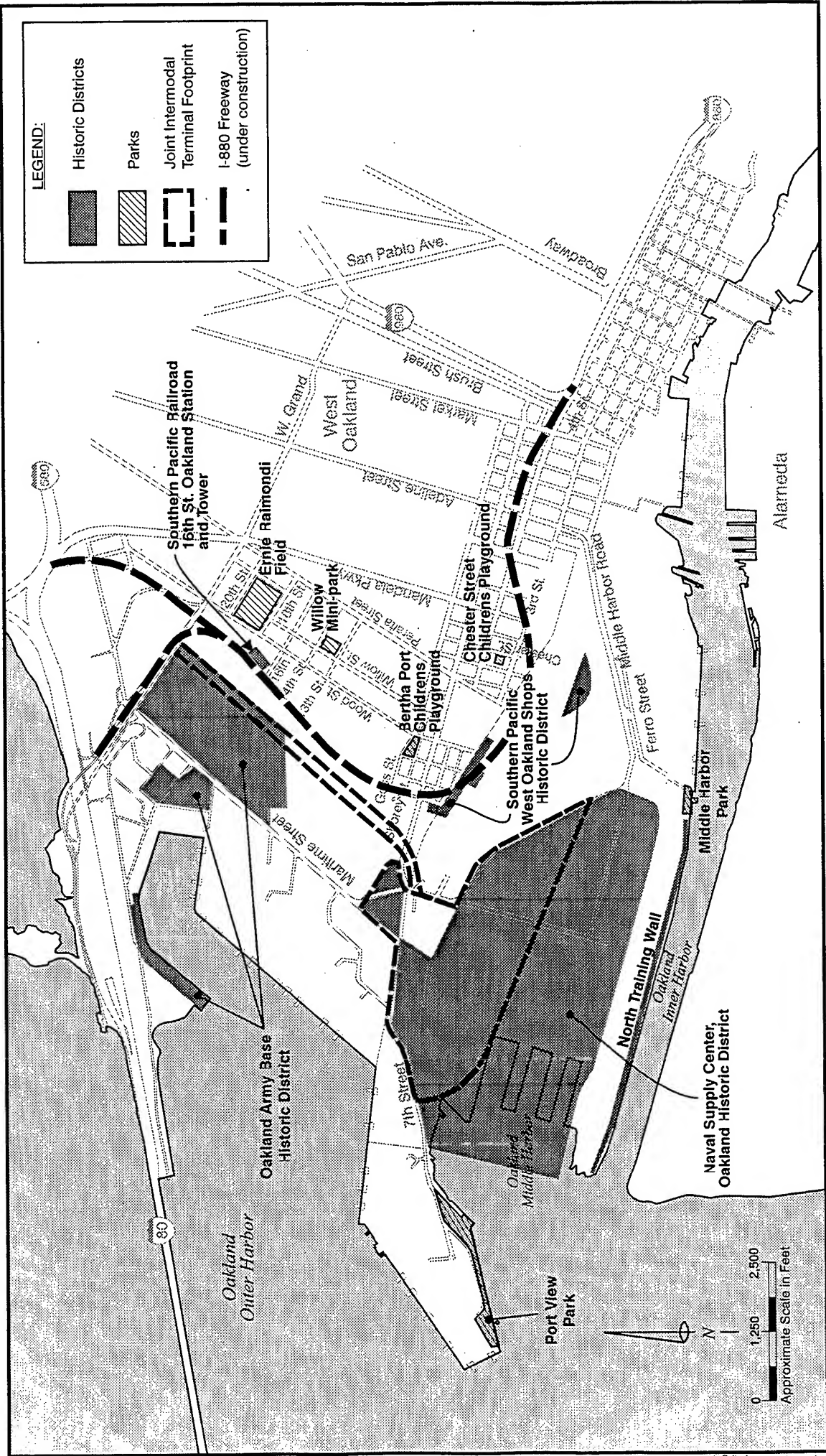
Section 4(f) Parklands and Historic Resources Minimum Marine/Minimum Rail Alternative

Fleet & Industrial Supply Center Oakland
and Port of Oakland



Figure C-2





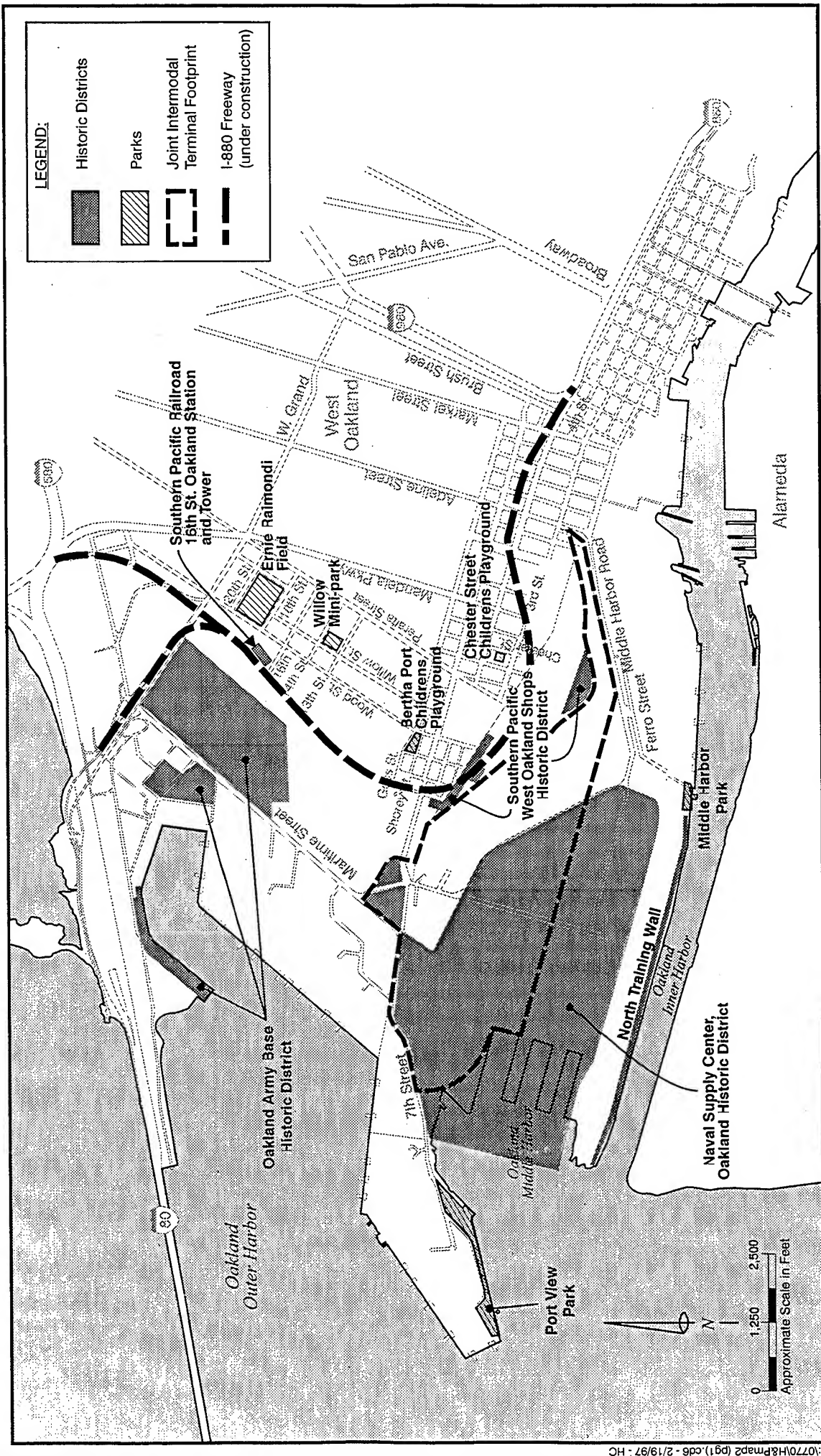
Source: Port of Oakland 1996

Section 4(f) Parklands and Historic Resources Maximum Marine/Minimum Rail Alternative

Fleet & Industrial Supply Center Oakland
and Port of Oakland



Figure C-3



Source: Port of Oakland 1996

Section 4(f) Parklands and Historic Resources Reduced Harbor Fill Alternative

Fleet & Industrial Supply Center Oakland
and Port of Oakland



Figure C-4



However, the descriptions of other section 4(f) properties that would be used by the other reuse alternatives are included in the following section for information.

There are three historic districts in the project area that are eligible for the National Register of Historic Places (NRHP): the NSCO, Oakland Army Base, and Southern Pacific West Oakland Shops Historic Districts (see Figures C-1, C-2, C-3, and C-4). In 1990, the State Historic Preservation Officer (SHPO) concurred that these three districts are eligible for the NRHP (see Section 3.4 in Volume 1). However, documentation has been undertaken to demonstrate that the Southern Pacific West Oakland Shops Historic District is no longer eligible for inclusion in the NRHP.

There are no known prehistoric or historic archaeological sites identified on FISCO property or in the project area. Because of past dredging and filling, the probability of encountering any subsurface archaeological resources on FISCO or in the project vicinity is very low.

Naval Supply Center, Oakland Historic District

The NSCO is owned by the US Navy and is approximately 214 ha (528 acres). The NSCO is located in West Oakland, approximately 3.2 km (two miles) west of the Oakland central business district, on the eastern shoreline of San Francisco Bay. The boundaries of this historic district are shown on Figures C-1, C-2, C-3, and C-4.

The Navy constructed NSCO in 1940 to provide logistical support for military activities in the Pacific region during World War II. Land use at FISCO has been characterized by extensive military support facilities, including warehouses, office buildings, some military housing, and the Middle Harbor berths and wharf area. Approximately 89.1 ha (220 acres) of the FISCO property are leased to the Port of Oakland for use as general transportation support activities, including warehousing, container depot activities, loading, and container cargo stations.

In 1990, the NSCO Historic District included 84 buildings and structures that contributed to the significance of the historic district and 42 noncontributing buildings and structures within the mapped boundaries. The list of contributing buildings and structures that existed at FISCO in 1990 are identified in Table 3-6, Section 3.4, page 3-32 in Volume I of this EIS/EIR.

Access to the NSCO Historic District is via two gates. Gate 1 is at the northern end of the historic district. From Gate 1, a bridge structure carries traffic across 7th Street to an at-grade intersection with 3rd Street. Gate 2 is at the eastern end of the historic district off of Middle Harbor Road and provides access to a perimeter road that runs roughly parallel to Middle Harbor Road for approximately one mile.

In 1996, approximately 2,600 Navy personnel were employed at the NSCO Historic District. An additional 400 employees that represent tenants of the Port

work at the Harbor Transportation Center, located in the eastern half of the site on property leased by the Port.

Oakland Army Base Historic District

The Oakland Army Base Historic District is owned by the US Army. The northwest and northeast sections of this historic district are approximately 6.3 ha (15.5) and 15.9 ha (39.5 acres), respectively. The northwest section is comprised of two discontinuous segments; the first segment (4.05 ha [10 acres]) is at the northern edge of the Oakland Outer Harbor, and the second segment is west of Maritime Street and south of Alaska Street. The northeast section of this historic district is between Maritime Street and the Southern Pacific Desert Yard south of West Grand Avenue. The boundaries for the Oakland Army Base Historic District are shown on Figures C-1, C-2, C-3, and C-4.

Twenty-four buildings and structures at the Oakland Army Base have been determined eligible for listing in the NRHP these are identified by building number in Table 3-7, Section 3.4, page 3-35 in Volume I of this EIS/EIR. The contributing buildings in the first segment of the northwest section are made up of three wharves and a shed, while the contributing buildings in the second segment are primarily storehouses and administrative buildings. Contributing buildings in the northeast section are primarily large warehouses and a switch engine building at the Knight Yard.

The main access to the Oakland Army Base Historic District is Maritime Street. Access to the wharves in the northwest section of the base is via Burma Road off Maritime Street. There are 19 active Department of Defense or federal agencies as tenants and five nonmilitary agency tenants on the Oakland Army Base as of July 5, 1996.

Southern Pacific West Oakland Shops Historic District

The Southern Pacific West Oakland Shops Historic District is owned by the Southern Pacific Railroad. This historic district includes two separate segments within the larger Southern Pacific West Oakland Railyard. The northern segment, approximately one ha (2.5 acres), is at the northern extreme of the Southern Pacific Railyard, from west of Bay Street to east of Wood Street. The southern segment, approximately 1.4 ha (3.5 acres), is separated from the northern segment by a bank of railroad tracks.

This historic district includes 14 buildings, 12 of which were identified as contributors, eight in the northern segment near Wood Street and four in the southern segment. The eligible buildings within this district are listed in Table 3-8, Section 3.4, on page 3-37 in Volume I of this EIS/EIR. These buildings include a telephone exchange, electrical shop, signal tower, lumber shed, freight depot, and mill.

Caltrans and Southern Pacific Railroad as part of the Cypress Freeway reconstruction in the early 1990s demolished four buildings within the northern segment of this historic district. A 1991 MOA between the Federal Highway Administration, Department of the Army, SHPO, and the Advisory Council on Historic Preservation (ACHP) called for recordation of these four buildings to the standards of the Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) prior to demolition, as well as attempts to market the buildings for relocation off-site. The marketing attempts were unsuccessful and the buildings were recorded and demolished. The four demolished buildings were located in the northern segment near Wood Street; this demolition removed half of the contributing buildings in that area.

Subsequent to these demolition activities, there was no determination if whether the integrity of the original historic district remained. Documentation has been undertaken to demonstrate that the qualities and characteristics that originally rendered this property a historic district were destroyed when the "core" district (i.e., buildings in the northern segment) were demolished; therefore, the remaining ancillary buildings in the southern segment of this district would no longer be eligible for inclusion in the NRHP. The Port is submitting documentation to the SHPO requesting concurrence that the Southern Pacific West Oakland Shops Historic District is no longer eligible for listing on the NRHP.

IMPACTS ON SECTION 4(F) PROPERTIES

The only section 4(f) resource used by the preferred Reduced Harbor Fill Alternative is the NSCO Historic District. However, the impacts on other section 4(f) properties that would be used by the other reuse alternatives are included in the following section for information.

All four project alternatives would involve further demolition of the NSCO Historic District. The Reduced Harbor Fill Alternative, the Preferred Alternative, would only have a direct impact on the NSCO District. The Maximum Marine/Minimum Rail Alternative would result in demolition in a portion of the Oakland Army Base Historic District and the Maximum Marine/Maximum Rail Alternative would result in demolition in a portion of the Southern Pacific West Oakland Shops Historic District.

NSCO Historic District

All four project alternatives would adversely effect the NRHP-eligible NSCO Historic District because an undertaking is considered to have an adverse impact when the effect on a historic property may diminish the integrity of that resource. The transfer, lease, or sale of a property from federal ownership without adequate restrictions or deed covenants to ensure preservation would be an adverse effect. This impact would apply to all FISCO contributing buildings and structures within the NRHP-eligible NSCO Historic District.

Under any of the four project alternatives, the Port would demolish all or nearly all contributing buildings within the NSCO Historic District. All historic buildings would be demolished under the Preferred Alternative. This demolition will complete a program that began in 1994, through which much of the NSCO Historic District would be demolished to make way for expansion of the Port.

In 1994, the Navy, the Port, the SHPO, and the ACHP executed a Memorandum of Agreement (MOA) pertaining to leasing up to approximately 89 ha (220 acres) of the 214-ha (528-acre) FISCO to the Port. The MOA accepted demolition of any buildings within 77 ha (190 acres) of the 89-ha (220-acre) existing lease area (see Appendix G in EIS/EIR Volume II, Exhibit 1).

The MOA called for mitigation measures, including recording selected buildings to HABS standards, preparing a Historic and Archeological Resources Protection (HARP) plan for the remainder of the base, and other mitigation measures. Some of these measures were implemented. Other measures, however, were interrupted by the decision in 1995 to close the base. The demolition accepted under the 1994 MOA will effectively destroy much of the NSCO Historic District by demolishing 39 of the 84 contributing buildings.

Under all four project alternatives, JIT construction would demolish most if not all of the remaining contributing buildings and would result in an adverse effect and a substantial adverse change to this historic property. However, as part of an April 1997 amended Memorandum of Agreement (MOA) for protecting historic resources at the NSCO Historic District, three existing officers quarters will be available for moving off-site. These quarters could also be relocated adjacent to and west of the JIT in a proposed public access area around the Oakland Middle Harbor under the Maximum Marine/Maximum Rail and Maximum Marine/Minimum Rail Alternatives (see Figures 2-4 and 2-8 in Chapter 2, Volume I).

Oakland Army Base Historic District

The Preferred Alternative would not have an adverse effect on the Oakland Army Base Historic District. Only the Maximum Marine/Minimum Rail Alternative would result in a direct use and adverse effect to the Oakland Army Base Historic District in two respects. First, it would expand the proposed rail terminal into the Oakland Army Base Knight Yard, a contributing element of the district. Second, it would demolish or modify a number of on-site buildings. Demolition would occur in the northeast section of the historic district. Plans do not allow for precise identification of the number of contributing buildings that could be demolished, but it appears that up to seven large warehouse buildings could be demolished under this scenario. Other non-historic buildings may be demolished as well. Therefore, the Maximum Marine/Minimum Rail Alternative would result in an adverse effect and a substantial adverse change to this historic property. The other three JIT alternatives would not have a direct use of the Oakland Army Base.

Access

Access to the Oakland Army Base Historic District would not be substantially affected by JIT operations. According to the Vision 2000 traffic analysis, level of service at intersections in the vicinity of the Oakland Army Base (Maritime/Burma, Maritime/West Grand, and Maritime/14th) would not be adversely affected as a result of the project under any of the four reuse alternatives (of which the JIT represents only a fraction of total development). Therefore, access to this historic district would not be substantially restricted (see Tables 5-7 and 5-8 on pages 5-55 and 5-56, Tables 5-13 and 5-14 on pages 5-93 and 5-94, Tables 5-15 and 5-16 on pages 5-115 and 5-116, and Tables 5-17 and 5-18 on pages 5-137 and 5-138 in Volume I). Measures will be implemented to control traffic during JIT construction (see Measures to Minimize Harm).

Noise

The Oakland Army Base Historic District is not a noise-sensitive area and is subject to high ambient noise levels from existing rail operations in the Oakland Army Base Knight Yard and adjacent Southern Pacific Desert Yard and nearby truck traffic. Therefore, future JIT-induced noise under any of the four alternatives is not anticipated to substantially impair the use or enjoyment of this district. Construction noise would be temporary in duration and would similarly not adversely effect public enjoyment of this 4(f) resource.

Air Quality

As described above, future carbon monoxide emissions would fall within the range of what has been historically recorded in the project area and would not substantially impair the use or enjoyment of the Oakland Army Base Historic District. In addition, projected increases in ozone precursor emissions under all four reuse alternatives would not restrict use or enjoyment of this district because it is located in an area already characterized by degraded air quality.

All four project alternatives would require demolishing existing FISCO structures; this activity would be a temporary source of fugitive dust and construction vehicle emissions. However, when properly controlled through best management practices, dust emissions would not substantially impair the use or enjoyment of the Oakland Army Base Historic District because it is located more than one-half mile from FISCO, where major demolition activities would occur.

Visual

Visual resources were qualitatively evaluated by assessing the nature and extent of change in existing landscape character. Demolishing buildings and multi-story warehouses in the NSCO Historic District under all four project alternatives would have a long-term visual change to users at the Oakland Army Base Historic District. Demolition would remove existing historic buildings and would create more expansive viewing opportunities to the west/southwest towards the Oakland Middle Harbor (which will be developed for public access and marine habitat enhancement under the Vision 2000 Program). Short-term building

demolition activities may result in temporary visual impacts; however, given the industrial nature of the existing FISCO site and surrounding project area, any visual intrusion would not interfere substantially with use of nearby 4(f) resources.

Under the Maximum Marine/Minimum Rail Alternative, proposed railcar storage on the Oakland Army Base Knight Yard would not have a noticeable or intrusive visual effect because the Knight Yard and adjacent Southern Pacific Desert Yard provide similar uses.

Wildlife, Vegetation, and Water Quality

The Oakland Army Base Historic District is located in a disturbed, developed area that support limited wildlife, vegetation, and water resources. These resources are not important factors at this historic district.

Southern Pacific West Oakland Shops Historic District

The Preferred Alternative would not have an adverse effect on the Southern Pacific West Oakland Shops Historic District. Only the Maximum Marine/Maximum Rail Alternative would result in a direct use and adverse effect to four buildings in the Southern Pacific West Oakland Shops Historic District. Demolition of the four buildings would occur in the southern subdistrict of this historic district. Reassessing the eligibility of this historic district for listing in the National Register is ongoing. The Port is submitting documentation to the SHPO requesting concurrence that the Southern Pacific West Oakland Shops Historic District is no longer eligible for listing on the NRHP. The other three JIT alternatives would not have a direct use of the Southern Pacific West Oakland Shops Historic District.

Access

The Southern Pacific West Oakland Shops Historic District is currently not accessible to the public. Similar to what is described for the Oakland Army Base, private access to this historic district would not be substantially restricted during JIT operations. During JIT construction, access could be temporarily affected by increased truck traffic along Middle Harbor Road. However, measures outlined under Measures to Minimize Harm would be undertaken to preserve access to this 4(f) resource during construction.

Noise

The Southern Pacific West Oakland Shops Historic District is not a noise-sensitive area and is subject to high noise levels from existing rail operations in the Southern Pacific Rail Yard. Therefore, future JIT-induced noise is not anticipated to substantially impair the use or enjoyment of this district.

Air Quality

As described above, future carbon monoxide emissions during JIT operations would fall within the range of what has been historically recorded in the project

area and would not substantially impair the use or enjoyment of this district. Furthermore, ozone precursor emissions under all four JIT alternatives would not adversely effect this district because it is located in an area already characterized by degraded air quality. Dust emissions during buildings demolition activities would be properly controlled by best management practices.

Visual

The buildings in the southern segment of this historic district are located in an existing heavily industrial area and subsequent JIT development would not impair or degrade the visual integrity of this historic district.

Wildlife, Vegetation, and Water Quality

The Southern Pacific West Oakland Shops Historic District is located in a disturbed, developed area that supports limited wildlife, vegetation, and water resources. These resources are not important factors in this historic district.

ALTERNATIVES

The first step under section 4(f) is to determine which alternatives are feasible and prudent. An alternative may be rejected as not being feasible and prudent for any of the following reasons:

- Not meeting the project purpose and need;
- Excessive cost of construction;
- Severe operational or safety problems;
- Unacceptable adverse social, economic, or environmental impacts;
- Serious community disruption; or
- An accumulation of a lesser magnitude of the foregoing types of factors.

Harm to a section 4(f) resource should not be included in those factors which are considered in determining whether an alternative is feasible and prudent. When sufficient analysis has been completed to demonstrate that a particular alternative is not feasible and prudent, no additional analysis or consideration of that alternative is required.

After eliminating the alternatives that are not feasible and prudent, a determination must be made on whether one or more of the remaining alternatives avoids the use of land from section 4(f) resources. If such avoidance alternatives exist, one of them must be selected. However, if all of the remaining feasible and prudent alternatives use land from section 4(f) resources, then a least harm analysis must be performed to determine which alternative does the least

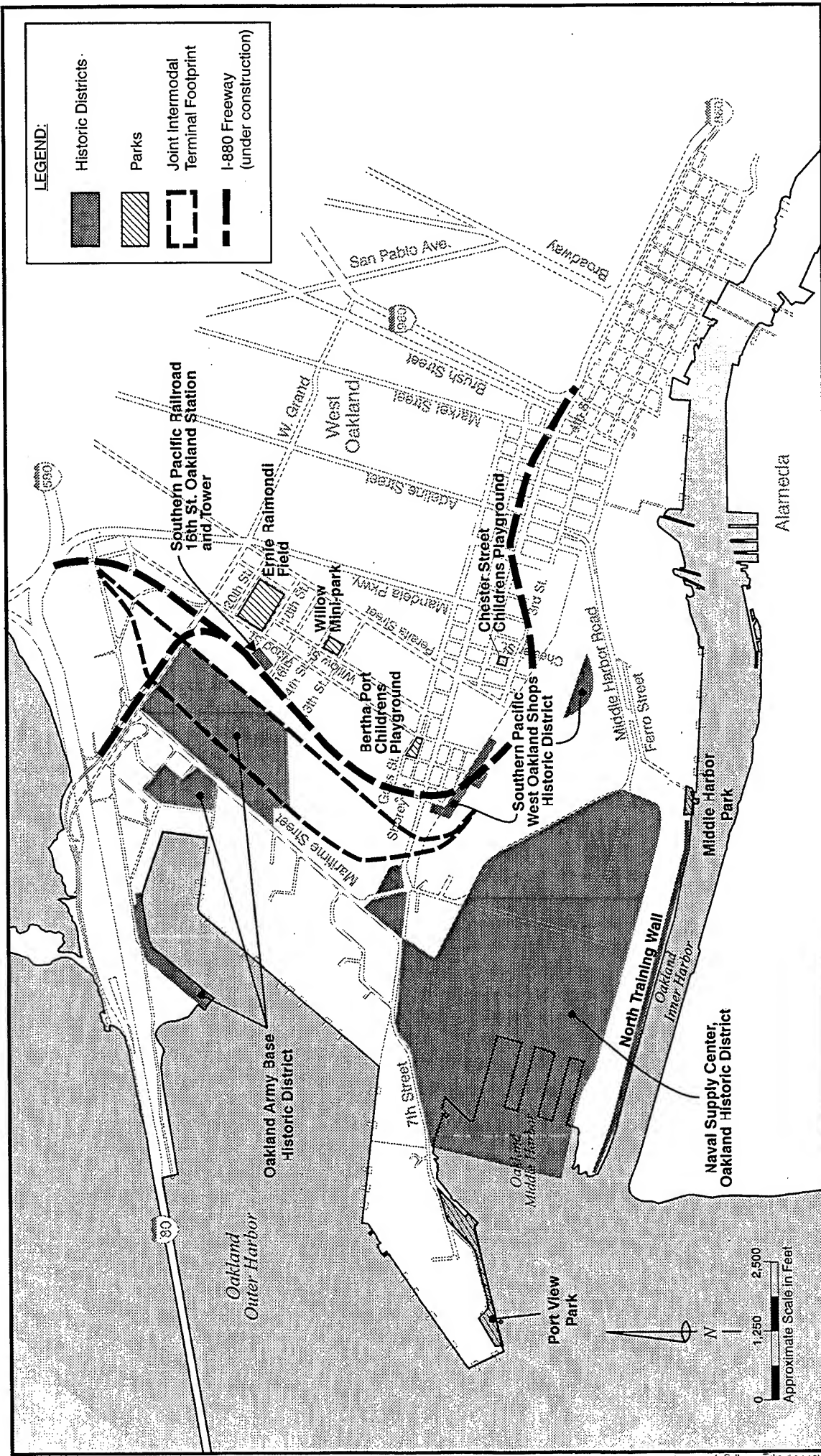
overall harm to section 4(f) resources. Where there is little or no difference in the overall harm to the section 4(f) resources, any of the alternatives may be selected.

FISCO is within the Port jurisdiction and is designated as a port priority use area in the April 1996 San Francisco BCDC and MTC Seaport Plan Update. Port priority use areas include marine terminals and directly related ancillary activities, such as container freight stations, as well as support transportation uses, including trucking and railroad yards. The location of the four Vision 2000 project alternatives evaluated in this EIS/EIR was based largely on the requirements for efficient maritime cargo transportation operations, including providing for enhanced joint intermodal rail terminal capability. This issue is further discussed in Volume I, Chapter 2, pages 2-3 and 2-5 of this EIS/EIR. Developing a JIT consistent with the Seaport Plan Update's port priority use designation restricts the range of alternatives that are feasible for evaluation. The FISCO site provides the most readily available and underused acreage of significant size in the Port area for developing the JIT.

In considering alternatives that do not use the FISCO property, the Port identified the eastern portion of the Oakland Army Base, located north of FISCO, referred to as Footprint Alternative A (Figure C-5). Approximately 200 acres in the eastern half of the Army base, along the western edge of the Southern Pacific's Desert Yard, extending from 7th Street north to the I-80/I-580 distribution structure, initially were considered as a potential location for the JIT. This location would provide good rail access and would leave all of FISCO available for marine terminal development. However, Footprint Alternative A was determined to be infeasible as an alternative site because the base is not within the Port's jurisdiction and the proposed rail terminal footprint would not meet the project's optimum engineering criteria. For example, this site would be too small and too short to accommodate expected train volumes and track lengths. In addition, the Grand Avenue viaduct would bisect the terminal footprint and, therefore, would cause potential overhead clearance problems.

The Port evaluated two additional JIT footprints on FISCO and Southern Pacific Railyard property during preliminary JIT studies. Footprint Alternative B encompasses Southern Pacific's entire existing intermodal facility plus the eastern portion of FISCO (Figure C-6). This footprint would leave most of FISCO available for marine terminal use. This alternative would have good mainline rail access, but it lacked loading tracks of sufficient length. The loading track curvature within the facility would not meet Southern Pacific and Union Pacific requirements and the facility size would be too small to handle optimum JIT volumes.

Footprint Alternative C consists of a strip of tracks running east-west and covering the Southern Pacific's intermodal facility and the center of the FISCO property (Figure C-7). This footprint would allow design of a "single-ended" facility that maximizes track lengths and minimizes track curvature. However,



Source: Port of Oakland 1995

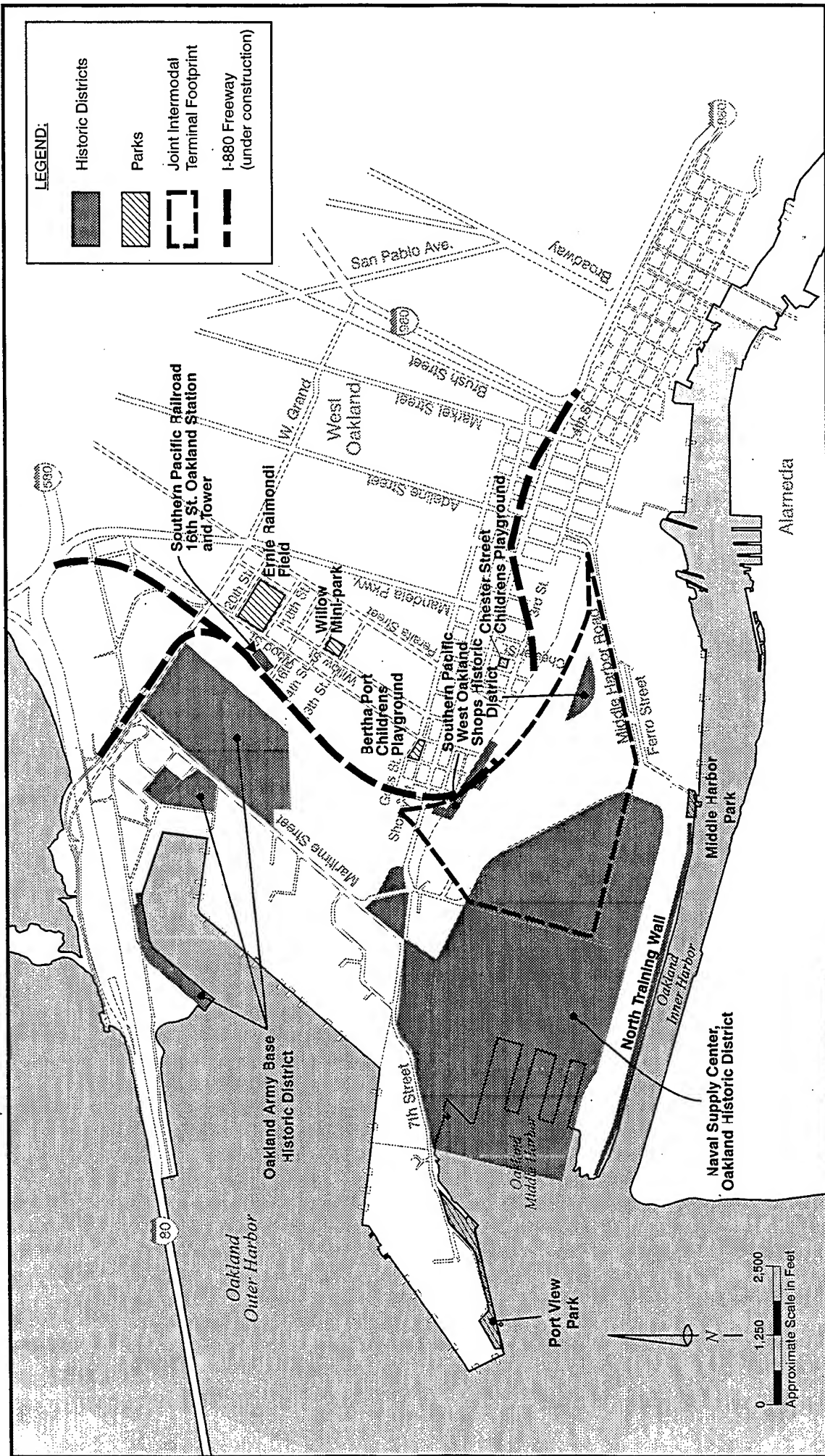
Section 4(f) Parks and Historic Resources JIT Footprint A

Fleet & Industrial Supply Center Oakland
and Port of Oakland



Figure C-5





Source: Port of Oakland 1995

Section 4(f) Parks and Historic Resources JIT Footprint B

Fleet & Industrial Supply Center Oakland
and Port of Oakland

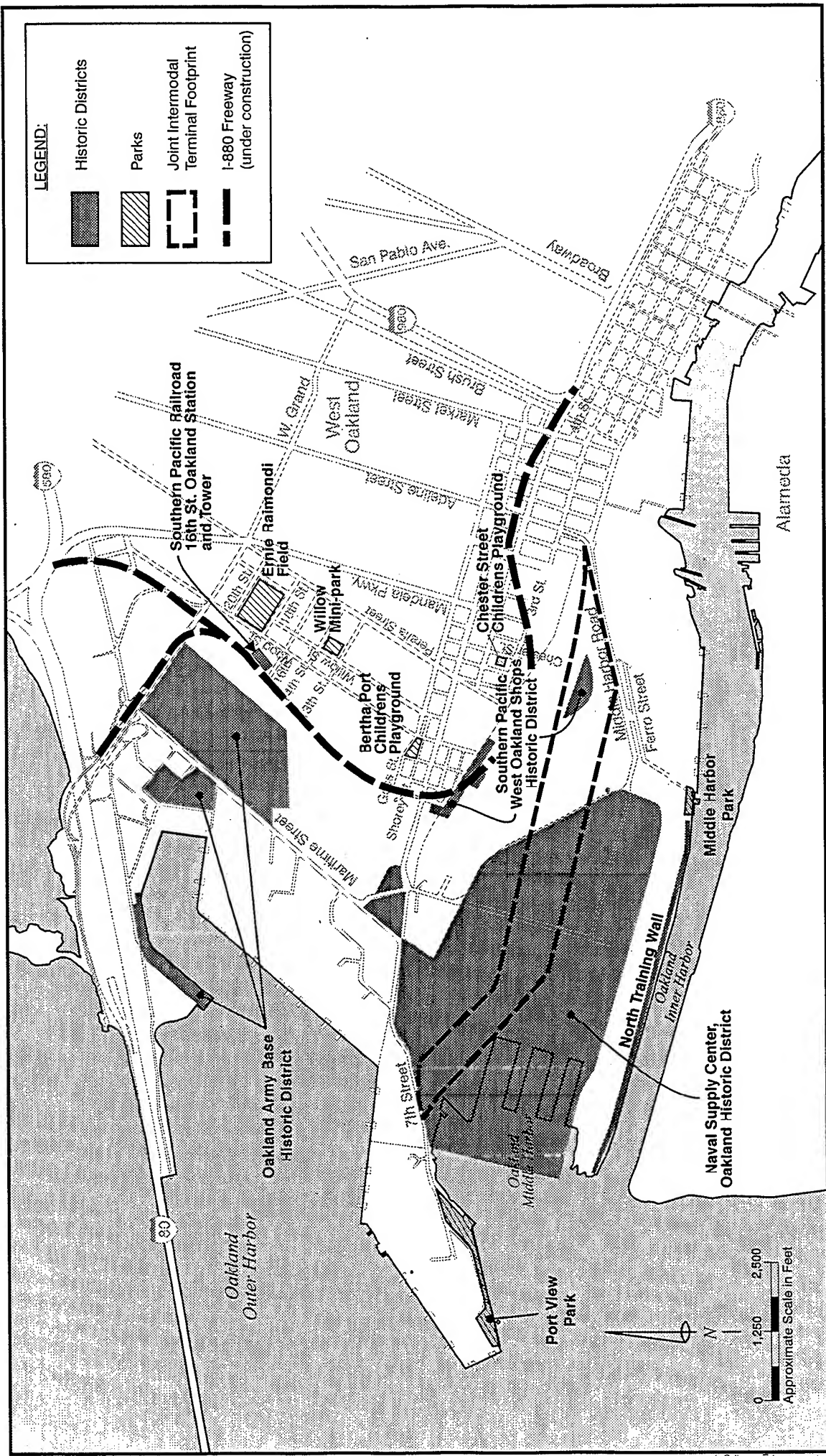
Port of Oakland



Figure C-6

C-17





Source: Port of Oakland 1995

Section 4(f) Parklands and Historic Resources JIT Footprint C

**Fleet & Industrial Supply Center Oakland
and Port of Oakland**

Figure C-7



Port of Oakland



Table C-1
Alternatives Considered for Section 4(f) Resources

Alternative	Feasible and Prudent	Uses Section 4(f) Land	Relative Net Harm to Section 4(f) Land After Mitigation
Footprint Alternative A	No	Yes (NA)	NA
Footprint Alternative B	No	Yes (NA)	NA
Footprint Alternative C	No	Yes (NA)	NA
Maximum Marine/ Maximum Rail Alternative	Yes	Yes	Greater
Minimum Marine/ Minimum Rail Alternative	Yes	Yes	Lesser
Maximum Marine/ Minimum Rail Alternative	Yes	Yes	Greater
Reduced Harbor Fill Alternative	Yes	Yes	Lesser

NA: Since this alternative is not feasible and prudent, it should be eliminated from further consideration. Whether section 4(f) land is used and the relative harm to section 4(f) protected properties are no longer relevant factors.

because this layout allows train access from only one end of the facility (as opposed to a double-ended facility that relieves congestion by providing twice as many ways to enter, exit, and switch in the yard), this alternative footprint was determined to make rail operations relatively difficult.

Table C-1 illustrates the alternative selection process described above. Footprint Alternatives A, B, and C were determined not to be feasible and prudent because they did not fully meet the project purpose and need and were problematic from an operations stand point. A section 4(f) evaluation is not necessary for these alternatives and no further analysis is warranted.

The remaining four project alternatives were determined to be feasible and prudent in terms of meeting the project's purpose and need as well as the project's engineering and design criteria. However, each of these four alternatives would result in a "direct use" of the NSCO Historic District. In addition, the Maximum Marine/Minimum Rail Alternative would directly use a portion of the Oakland Army Base Historic District and the Maximum Marine/Maximum Rail Alternative would directly use a portion of the Southern Pacific West Oakland Shops Historic District. Therefore, the Minimum Marine/Minimum Rail and Reduced Harbor Fill Alternatives were determined to have the least overall harm

to section 4(f) historic resources. The Port's preferred alternative is the Reduced Harbor Fill Alternative.

None of these remaining project alternatives could avoid each and every 4(f) resource in the project area while meeting the minimum size thresholds needed for cargo handling and transfer needed to reasonably develop a JIT. There are no other appropriate locations in the Bay Area that would be suitable for the proposed JIT. The proposed project location is situated close to the Oakland Inner Harbor Channel, the only deep-draft navigation channel within the Port jurisdiction that can provide marine access to a joint intermodal facility. In addition, the proposed JIT location is ideally situated close to existing rail and highway infrastructure that will expedite the transport of cargo between vessels, trains, and trucks for efficient distribution of goods.

To avoid all section 4(f) resources, the Port would have to develop the JIT on other property within or beyond its jurisdiction. Although there may be other land available that would not directly effect 4(f) resources, use of other property away from the FISCO property could involve additional impacts that would not support the project's purpose and need to increase operating rail efficiency. For example, JIT construction at another location may not be within close proximity to existing rail corridors, therefore increasing the drayage distance to transport cargo that in turn would result in traffic and air quality impacts. In addition, unlike the FISCO site, other project locations may not be specified as a port priority use pursuant to the April 1996 San Francisco Bay Conservation and Development Commission and Metropolitan Transportation Commission Seaport Plan Update.

One nearby site that is designated for port priority use is 220 acres in the northwestern corner of Alameda Island along the southern edge of the Oakland Inner Harbor. However this site, part of Naval Air Station (NAS) Alameda, contains potential 4(f) resources, including a historic wall along the Inner Harbor shoreline and habitat for the endangered California least tern. Furthermore, although marine vessels can access this site via the Inner Harbor, there are no linkages to existing rail corridors. To implement a JIT on this site, rail tracks would have to be constructed either under or across the Oakland Inner Harbor to connect to existing Union Pacific/Southern Pacific rail lines. This type of activity would result in significant traffic and air quality impacts.

If there is an available alternative site adjacent to the bay that avoids all section 4(f) resources, it would likely require the need to construct and/or relocate rail corridors and/or deep-draft marine terminals. This site would not be efficient for Port operations because it would be isolated from existing Port facilities and other necessary infrastructure required to operate a JIT and would result in much greater physical impacts compared to the proposed project. Therefore, project alternatives have been limited to variations of JIT designs that maximize use of FISCO rather than other locations on non-FISCO property.

Consultation pursuant to Section 106 of the National Historic Preservation Act regarding Port demolition in the NSCO Historic District was conducted in 1994. This consultation process concluded with the signing of an MOA that authorized demolition of buildings and structures located on about one-half of the eligible NSCO Historic District. Since the MOA was executed, thirteen contributing buildings have been demolished and another 29 are scheduled for demolition by September 1998. This work will occur with or without use of the ISTEA funds. The NSCO Historic District has suffered a substantial loss of integrity through demolitions already accomplished and will suffer much greater loss of integrity through demolitions approved but not yet accomplished in the 1994 MOA.

MEASURES TO MINIMIZE HARM

In April 1997, the Navy, Port, SHPO, and ACHP signed an amendment to the 1994 MOA that allows for demolition of buildings on the remainder of the NSCO Historic District. This amended MOA includes mitigation measures that take into account the larger areas of impacts associated with Navy disposal of all of FISCO. These mitigation measures are summarized in Section 4.1.4.2, Impact 1, on pages 4-9 and 4-10 and Section 5.1.4.2, Impact 1, pages 5-15 and 5-16 in Volume I of this EIS/EIR and are included in the amended historic mitigation plan in Appendix G in Volume II of this EIS/EIR.

To minimize some potential short-term impacts during JIT construction, the following measures will be incorporated into the project:

- Coordinating vehicle routes and construction activities with local authorities to ensure neighborhood safety and to minimize traffic, dust, and noise impacts;
- Adding traffic controls where construction traffic enters major streets; and
- Applying best management practices to suppress dust (see Sections 4.1.10.2 and 5.1.10.2, Mitigation 2, for a specific list of potential dust control measures during construction).

OTHER PARK, RECREATIONAL FACILITIES, WILDLIFE REFUGES, AND HISTORICAL PROPERTIES EVALUATED RELATIVE TO THE REQUIREMENTS OF SECTION 4(F)

The purpose of this discussion is to address section 4(f) requirements relative to other park, recreational facilities, wildlife refuges, and historical properties in the project vicinity. As indicated below, none of the alternatives under consideration result in a section 4(f) use of these other park, recreational, wildlife refuges, or historical resources. The discussion of each resource either documents (1) why the resource is not protected by the provisions in section 4(f) or (2) if it is protected by the provisions of section 4(f), why none of the alternatives under consideration cause a section 4(f) use by (a) permanently incorporating land into the project, (b)

by temporarily occupying land that is adverse to the preservationist purposes of section 4(f), or (c) by constructively using land from the resource.

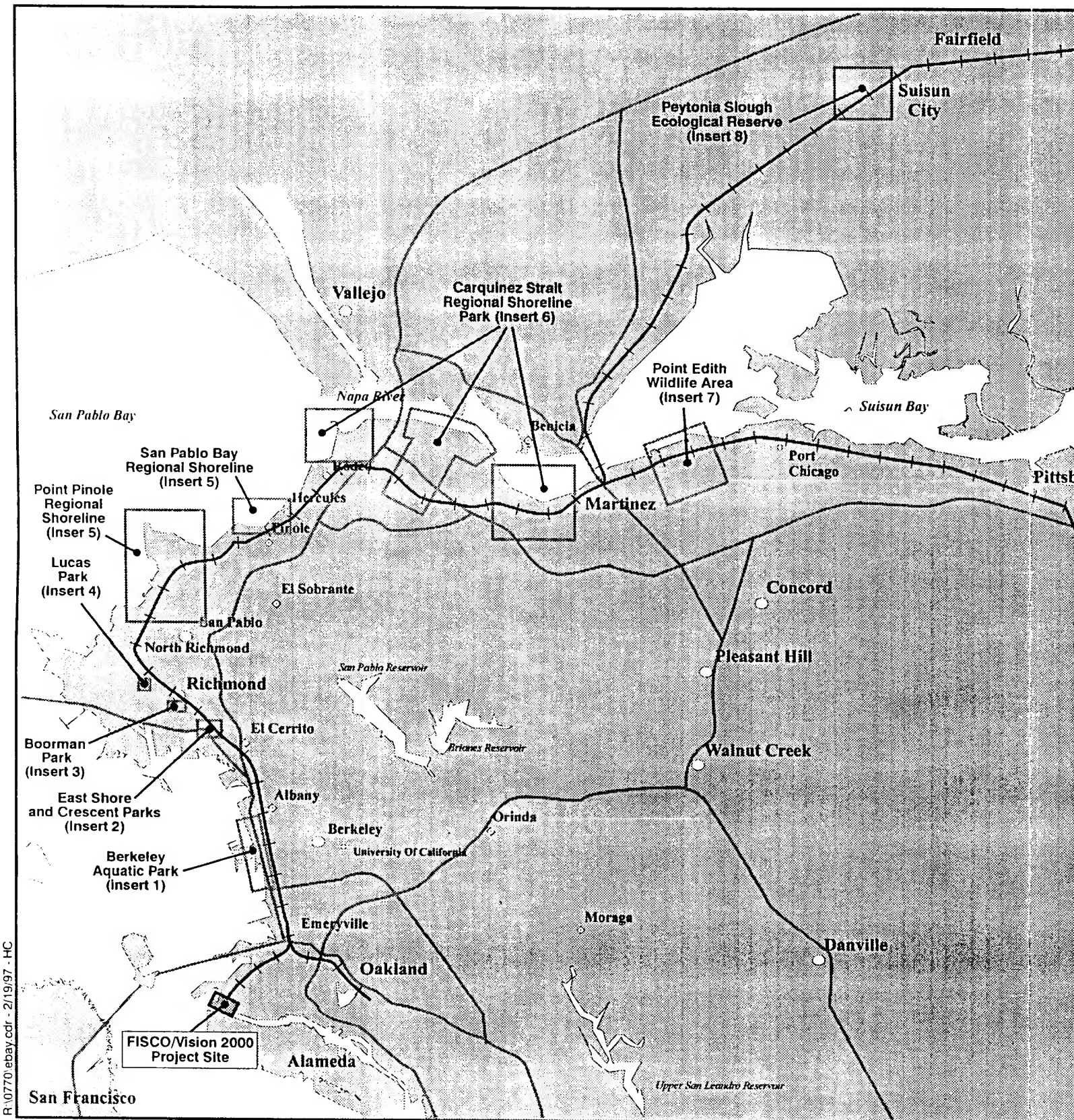
Two regions of influence (ROIs) were used to identify other park, recreational facilities, wildlife refuges, and historic properties potentially affected by the project alternatives. An ROI is a geographic area in which impacts for a particular resource would likely occur. The first ROI, in the vicinity of the JIT, encompasses the area within a 0.8 kilometer (km) (one-half mile) radius of the JIT. Six parksites and two historic properties located within this ROI are evaluated below and are identified on Figures C-1, C-2, C-3, and C-4: Port View Park, Middle Harbor Park, Ernie Raimondi Field, Willow Mini-park, the Bertha Port and Chester Street Playgrounds, a structure referred to as the north training wall, and the Southern Pacific Railroad Oakland 16th Street Station and 16th Street Tower. The San Francisco Bay Trail, shown on EIS/EIR Figure 3-5 on page 3-11, is also evaluated below.

The second ROI is the 228.6 meter (m) (750-foot) band along the Southern Pacific mainline tracks (north to the Solano County/Sacramento County border and east to the Contra Costa/San Joaquin County border) that could be affected by increased regional rail service resulting from JIT operations. Eight parks, one wildlife area, and one ecological reserve are within this ROI: Aquatic Park, East Shore Park, Crescent Park, Boorman Park, Lucas Park, Point Pinole Regional Shoreline, San Pablo Bay Regional Park, Carquinez Strait Regional Shoreline Park, Point Edith Wildlife Area, and Peytonia Slough Ecological Reserve. The locations of these resources are depicted on Figures C-8 and C-9; however, as the only potential section 4(f) project issues associated with these sites would be noise and air pollutant emissions, they have not been described in detail below.

DESCRIPTION OF OTHER PARKS, RECREATIONAL FACILITIES, WILDLIFE REFUGES, AND HISTORICAL PROPERTIES

Port View Park

Port View Park is approximately 1.6 hectare (ha) (four acres) and is owned by the Port of Oakland. This park is located on the southeast side of 7th Street, near the Seventh Street Marine Container Terminal in West Oakland. Facilities provided at this park include a fishing pier, snack bar and bait shop, restrooms, playground, picnic tables, barbecues, outdoor sculpture, and an enclosed two-story viewing area. Popular activities at this park are picnicking and fishing. Pedestrian and vehicular access to Port View Park is via 7th Street. Middle Harbor Park, located about 2.9 km (1.8 miles) to the southeast, provides the only other public fishing pier and shoreline access to the bay.



These parks are located adjacent to the Southern Pacific mainline tracks north and east of the project site.

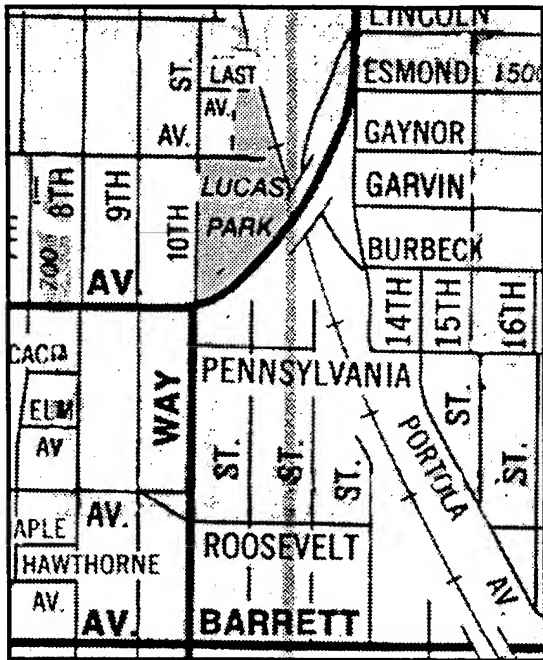
Section 4(f) Resources Along Pacific Mainline Corridor

Fleet & Industrial Supply Center and Port of Oakland

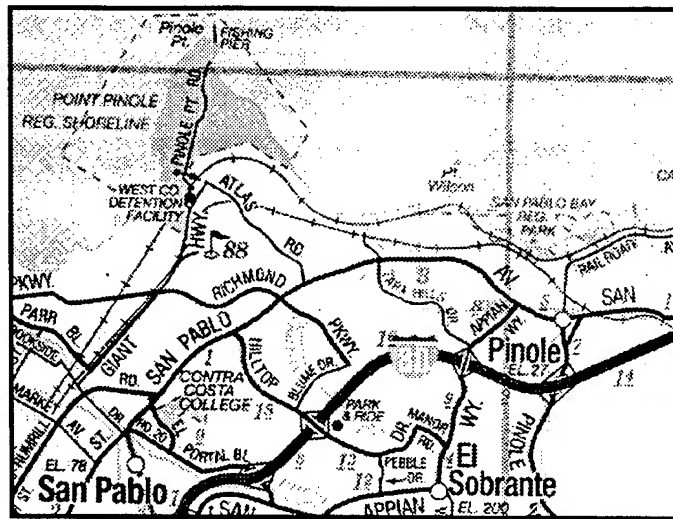
Figure C-8



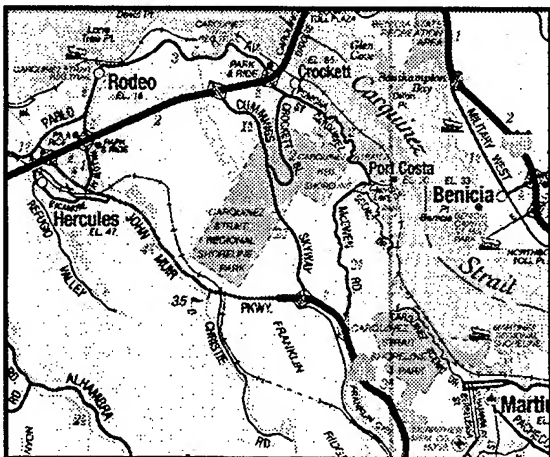
0 5,000 10,000
Approximate Scale in Feet



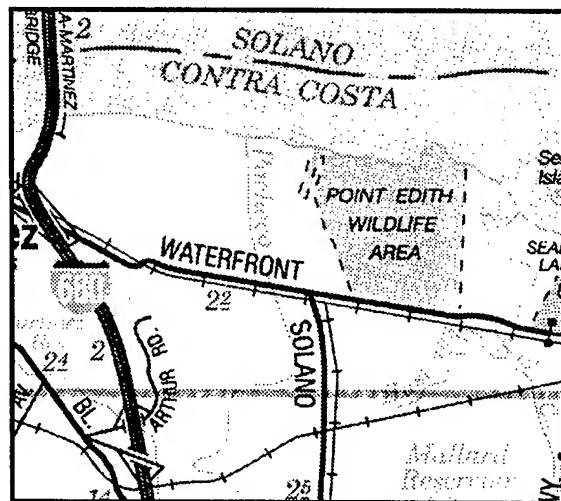
Insert 4: Lucas Park



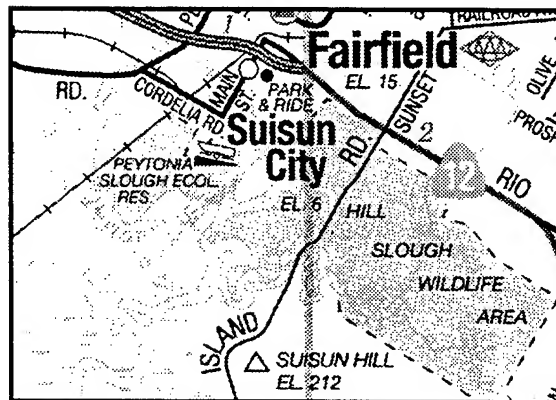
Insert 5: Pinole Point Regional Shoreline and San Pablo Bay Regional Park



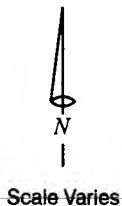
Insert 6: Carquinez Strait Regional Shoreline Park



Insert 7: Point Edith Wildlife Area



Insert 8: Peytonia Slough Ecological Reserve



These parks are located adjacent to the Southern Pacific mainline tracks north and east of the project site.

Section 4(f) Resources Along the Southern Pacific Mainline Corridor

Fleet & Industrial Supply Center Oakland and Port of Oakland

Port of Oakland

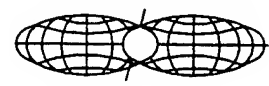


Figure C-9

Developed by Tetra Tech

Middle Harbor Park

Middle Harbor Park is an approximate 0.4-ha (one-acre) park owned by the Port of Oakland and located along the Oakland Inner Harbor between the Middle Harbor Terminal and the Union Pacific Intermodal Railyard. Facilities at Middle Harbor Park include picnic tables, benches, and a fishing pier. Visitors use this park for eating lunch and fishing. Vehicular and pedestrian access to this park is from Ferro Street via Middle Harbor Road. This access route passes through a heavily industrialized part of the Port area.

Ernie Raimondi Field

Ernie Raimondi Field is owned by the City of Oakland and is approximately 4.05 ha (10 acres). This field is located in West Oakland, west of I-880, and is bordered by 20th Street to the northeast, Campbell Street to the southeast, 18th Street to the southwest, and Wood Street to the northwest. Ernie Raimondi Field has one baseball diamond and two soccer fields. The field is used primarily for baseball/softball games and soccer matches. Street parking is available for vehicles, and pedestrian access is from the surrounding four streets.

During the weekends, it is estimated that between 300 and 400 people use this field. During the weekday, data on usage is derived from records of permitted activities. There are about 50 to 75 daily permitted users between the hours of 3:30 PM to sunset (Morgan, R., October 28, 1996, personal communication). Ernie Raimondi Field is the only park in the vicinity that provides active recreational fields for sports such as baseball and soccer.

Willow Mini-park

Willow Mini-park is owned by the City of Oakland and is approximately 0.36 ha (0.9 acre). This park is located in West Oakland, west of I-880, and is bordered by Willow Street to the northwest, 13th Street to the southwest, and 14th Street to the northeast. Facilities at this Mini-park include picnic areas (four tables), a half-size basketball court, restrooms, and a tool shed. Recreation activities at this Mini-park include picnicking, basketball, barbecuing, and checkers. Principal vehicular access is via Willow Street. Approximately 50 or fewer people use the Willow Mini-park daily (Gullet, D., November 5, 1996, personal communication). This park has experienced problems with litter and is viewed as a potential location for illegal drug activities (Morgan, R., November 5, 1996, personal communication). Chester Street Playground, located about 1.04 km (0.65 miles) to the southeast, also provides a half-size basketball court to this neighborhood.

Bertha Port Playground

Bertha Port Playground is owned by the City of Oakland and is approximately 0.1-ha (one-quarter acre). This playground is located in West Oakland, west of I-880, and is bordered by Shorey Street to the east, Wood Street to the south, and Goss Street to the west. Approximately 0.06 ha (0.14 acre) of this site is grass, and the remaining 0.04 ha (0.11 acre) is a playground. There are no athletic facilities at this site. Adults and children use the playground to relax and have lunch. The

West Oakland community, estimated at approximately 23 to 30 persons per day (Gullet, D., November 5, 1996, personal communication) uses this playground. Bertha Port Playground has also experienced problems with litter and is viewed as a potential location for illegal drug activities (Morgan, R., November 5, 1996, personal communication).

Chester Street Playground

Chester Street Playground is owned by the City of Oakland and is approximately 0.5 ha (0.13 acre). This playground is located in West Oakland, west of I-880, and is bordered by Chester Street to the southeast between 3rd and 5th Streets. This playground is mostly paved with a half-size basketball court and a small sand playground with play apparatus. There are no on-site restrooms. In mid-October 1996, vandals destroyed the play equipment, and the city has no plans to restore the playground to its previous condition (Morgan, R., November 5, 1996, personal communication). Prior to the October 1996 vandalism incident, it was estimated that about 20 people per day used this facility (Gullet, D., November 5, 1996, personal communication).

Union Pacific Intermodal Railyard North Training Wall

Although located on the Union Pacific Intermodal Railyard, it is presumed that the US Army Corps of Engineers owns the north training wall, a structure that is located along the northern edge of the Inner Harbor Channel. There is also a parallel south training wall along the northern edge of Alameda Island. Together, these two training walls defined the alignments for moles (i.e., bermed railroad tracks extending into the water) constructed at the Alameda and Oakland side of the Oakland Inner Harbor.

The north training wall is visible for about 731.7 m (2,400 feet), extending east from the western edge of the Union Pacific Intermodal Railyard. To the east, this training wall is completely buried under fill. It is presumed that more than 2,134 m (7,000 feet) of the training wall are buried in this manner.

The north training wall was originally seen as an underwater jetty made of stone and pilings and designed to train the channel, forcing it to scour itself and deepen the channel for navigational purposes. Later, as the wall was constructed, it was raised above the high-water mark, converting it into a jetty. The north training wall is backfilled and in places is covered by fill installed by the railroad many years after the wall was constructed.

Access to this historic property is via Ferro Street but it is not accessible by the public. The north training wall is part of the Union Pacific Intermodal Railyard that employs about 55 workers. It is not used for any purpose.

Southern Pacific Railroad Oakland 16th Street Station and 16th Street Tower

The Southern Pacific Railroad Oakland 16th Street Station and Tower is located at the end of 16th Street off Wood Street in West Oakland. The station was

constructed in 1911-1912 by the Southern Pacific Railroad and is 83.2 m (273 feet) long overall, 18.3 m (60 feet) high, and contains beaux-arts decorative details. The 16th Street Tower is a three-story reinforced concrete structure. This depot was an active train station from 1912 up until it was damaged in the 1989 Loma Prieta earthquake, when other buildings in the station area were converted for temporary use as a train station. The historic station is vacant and no longer used. Train service is now provided at two new Amtrak stations at Emeryville and Jack London Square.

San Francisco Bay Trail

The San Francisco Bay Trail is a network of proposed and existing multi-use pathways circling San Francisco and San Pablo Bays. When complete, it will encompass a 644-kilometer (400-mile) route through all nine Bay Area counties and 42 shoreline cities. Approximately 274 kilometers (170 miles) of the planned trail have been completed. The Bay Trail offers walkers, runners, cyclists, nature lovers, and hikers access to the bay and its many diverse resources.

Figure 3-5 on EIS/EIR page 3-11 depicts the existing segments and conceptual alignments of the Bay Trail in Oakland and Alameda. Two short segments of the Bay Trail are currently designated in the JIT vicinity and come under the protection of section 4(f). The closest Bay Trail segment to the JIT extends along 7th Street west of Maritime Street. The trail is within the 7th Street right-of-way and is not separated from the roadway. The Port has been granted an order to vacate the western portion of 7th Street and will provide right-of-way for a future separated bicycle path. A direct section 4(f) use will not occur because future adjustments or changes in the alignment of 7th Street or the trail will not substantially impair the continuity of the trail. The other existing short segment of the Bay Trail is southwest of Middle Harbor Road near Middle Harbor Park and removed from the JIT. JIT proximity impacts to these two short segments of designated Bay Trail are addressed below.

The remaining portions of the Bay Trail in the JIT vicinity do not currently exist, are conceptual in nature, and are, therefore, not protected by the provisions of section 4(f). However, to assure mutual compatibility between the future Bay Trail and future Port facilities, the Port will coordinate further planning and development of the JIT and other Vision 2000 facilities with the planning and development of the Bay Trail by the Association of Bay Area Governments, the Oakland City Parks and Recreation Department, the National Park Service, and other appropriate agencies. Future Port Vision 2000 project-specific environmental evaluations will describe and evaluate the mutual development of the Bay Trail and Port facilities.

IMPACTS ON OTHER PARKS, RECREATIONAL FACILITIES, WILDLIFE REFUGES, AND HISTORICAL PROPERTIES**Access**

JIT operations would not restrict access to 4(f) resources in the project vicinity. During JIT construction, access to Port View Park and Middle Harbor Park could be affected by increased truck traffic along 7th Street and Middle Harbor Road, respectively. JIT construction under all four project alternatives would also require reconstruction and/or extension of Middle Harbor Road through the FISCO site. However, measures will be taken to keep these two roads open to public through-traffic and therefore not reduce or interfere with public use of these two parksites (see Measures to Minimize Harm). There would be no access impacts at the 4(f) parks, wildlife area, or ecological reserve adjacent to the Southern Pacific rail line because no new construction along these tracks is proposed as part of the JIT, therefore, existing access to these resources would not be disturbed.

The Port's Vision 2000 Program includes a public access component that will substantially increase the amount of usable public recreational and open space opportunities in the Middle Harbor area (31 new acres of public shoreline access under the preferred Reduced Harbor Fill Alternative) and will include improved linkages to the Bay Trail at 7th Street (see EIS/EIR Section 2.2.6). As described above, the Port will coordinate with applicable agencies during planning and development of the JIT and other Vision 2000 facilities with planning and development of the Bay Trail.

Noise

Any of the four project alternatives could result in increased noise levels attributable to increases in truck and rail traffic that in turn, could effect noise-sensitive 4(f) resources. Noise generated by increased vehicle traffic is not expected to have a severe impact on nearby park 4(f) resources in the project vicinity. The Cypress Freeway, scheduled for completion sometime in 1997, would reduce existing traffic volumes along many surface streets and would add this freeway segment as a new noise source in the neighborhood. Because of high existing and future reduced background traffic volumes anticipated on neighborhood streets with completion of the Cypress Freeway, future project-induced traffic would not have a severe impact on noise levels at these 4(f) resources and therefore would not substantially impair activities at these existing urban resources.

The Bay Trail segments in the project vicinity are within existing street rights-of-way used by trucks and automobiles to access the waterfront. It is not anticipated that future noise levels on these roadways would be substantially different than current noise levels and therefore would not substantially impair the use or enjoyment of the Bay Trail.

Future noise levels from daily rail operations were estimated for six park sites in the immediate JIT vicinity. Rail operations for each alternative were broken down by train length and train type (i.e., Amtrak, switchers, and freights). A 15-MPH train speed was assumed for all rail operations. The rail operations noise model used for this analysis simulates the history of pass-by events and then computes CNEL levels based on event duration, number of daytime events, number of evening events, and number of nighttime events (details on existing and projected type and number of trains travelling along the Southern Pacific mainline in the Bay Area are documented in Appendix J.3 in Volume II). Calculations were performed with and without train horn noise. The rail operations noise model uses locomotive noise equations from Lotz and Kurzweil (1979) and Remington, Rudd, and Mason (1980). Railcar noise equations used in the model are from Lotz and Kurzweil (1979).

As shown in Table C-2, future projected noise levels at the six nearby 4(f) park sites would be lower than the 75 decibels (dB) estimated at FISCO in the mid-1980s (US Navy 1990). Therefore, it is anticipated that none of the alternatives would generate noise levels from rail operations that would substantially impair use of parks or playgrounds, including existing portions of the Bay Trail, within 0.8 km (one-half mile) of the JIT. The Union Pacific training wall and Southern Pacific 16th Street Station are not publicly accessible and are not noise-sensitive resources, therefore project noise would not substantially impair the use or integrity of these resources.

Table C-2
Noise Impacts of Rail Operations at Park and Playground Locations within 0.8 km
(one-half mile) of the JIT

Park	CNEL Increment from Rail Operations (dB)			Reduced Harbor Fill
	Maximum Marine/Maximum Rail	Minimum Marine/Minimum Rail	Maximum Marine/Minimum Rail	
Port View Park	53.8	53.3	53.5	53.5
Middle Harbor Park	54.5	54.1	54.6	55.2
Ernie Raimondi Field	53.8	53.3	53.4	53.3
Willow Mini Park	53.9	53.8	53.9	54.0
Bertha Port Playground	54.5	54.2	54.5	54.7
Chester Street Playground	55.5	54.0	54.2	55.5

Note: Analyses assume no routine sounding of train horns in the JIT area.

There are eight additional parksites, as well as one wildlife area and one ecological reserve north and east of the proposed JIT site, that are located within 229 m (750 feet) of the Southern Pacific mainline tracks (see Figures C-8 and C-9):

- Aquatic Park (Berkeley);
- East Shore Park (Richmond)
- Crescent Park (Richmond);
- Boorman Park (Richmond);
- Lucas Park (Richmond);
- Point Pinole Regional Shoreline (Contra Costa County, managed by East Bay Regional Parks District);
- San Pablo Bay Regional Park (Contra Costa County, managed by East Bay Regional Parks District)
- Carquinez Strait Regional Shoreline Park (Contra Costa County, managed by East Bay Regional Parks District)
- Point Edith Wildlife Area (Contra Costa County)
- Peytonia Slough Ecological Reserve (Solano County)

The existing daily number of freight trains travelling north along the mainline segment between the JIT and Richmond is 20. The projected average increase in the number of freight trains travelling along this segment ranges from four under the Minimum Marine/Minimum Rail Alternative to 11 under the Maximum Marine/Maximum Rail, Maximum Marine/Minimum Rail, and Reduced Harbor Fill Alternatives. Twelve freight trains travel north daily in the mainline segment between Richmond and Martinez. The projected average increase in the number of freight trains travelling along this segment ranges from eight under the Minimum Marine/Minimum Rail Alternative to 15 under the Maximum Marine/Maximum Rail, Maximum Marine/Minimum Rail, and Reduced Harbor Fill Alternatives (see Appendix J.3 in Volume II). However, noise caused by increases in train pass-by trips is not anticipated to cause a substantial decrease or impairment in the use or enjoyment of nearby 4(f) resources because of the existing high volume of train traffic along this corridor.

Table C-3 summarizes the results of the rail noise modeling analysis. Compared to conditions without the JIT project, JIT implementation would result in a noise level increase of less than 3 dB. Given the already high ambient noise environment in the vicinity of the Southern Pacific mainline tracks, this minor increase in noise would not substantially impair the use or enjoyment of these 4(f) resources by noise-sensitive receptors (also see Table 5-12, Section 5.1.11.2, page 5-67 in Volume I).

Table C-3
CNEL Noise Impacts of Rail Operations (dB) to Sensitive Receptors
within 229 m (750 feet) of the Southern Pacific Mainline Tracks

Distance (m)	No Action		Maximum Marine/ Maximum Rail Alternative		Minimum Marine/ Minimum Rail Alternative		Maximum Marine/ Minimum Rail Alternative		Reduced Harbor Fill Alternative	
	w/o Horn	w/Horn	w/o Horn	w/Horn	W/o Horn	w/Horn	w/o Horn	w/Horn	w/o Horn	w/Horn
229 (750 feet)	65.7	66.0	67.9	68.2	66.3	66.5	68.0	68.2	68.0	68.2

Air Quality

Recent air quality monitoring data near the project site is summarized in Tables 3-25 and 3-26 in Volume I of the EIS/EIR. Future carbon monoxide emissions would fall within the range of what has been historically recorded in the project area and therefore project emissions would not substantially impair the use or enjoyment of 4(f) properties in the JIT vicinity. Similarly, it is anticipated that there would be no significant carbon monoxide impact on 4(f) properties that are located near the Southern Pacific mainline tracks.

Projected future ozone precursor emissions without the project would be high compared to the BAAQMD's regulatory threshold of 15 tpy (see discussion under Impacts on Section 4(f) Properties) and JIT implementation under all four reuse alternatives would result in further increased emissions. However, these emissions would not substantially impair use or enjoyment of section 4(f) resources, including 4(f) resources in the immediate JIT vicinity and those adjacent to the Southern Pacific mainline tracks, because they are located in areas already affected by degraded air quality and existing rail operations.

All four project alternatives would require demolishing existing structures within the JIT footprint. This demolition activity would be a temporary source of fugitive dust and construction vehicle emissions. However, when properly controlled with best management practices, dust from these activities would not create a localized nuisance nor would it substantially impair the use or enjoyment of nearby 4(f) resources. The closest 4(f) resources to the proposed area of demolition and construction would be Port View Park and Middle Harbor Park. However, both sites are located approximately 366 m (1,200 feet) from the outer edge of the JIT's boundary; therefore, temporary air emissions from demolition activities would not be expected to interfere with use of these parks.

Visual

Demolishing FISCO buildings and multi-story warehouses, seen in the foreground from Port View and Middle Harbor Parks and the existing portions of the Bay Trail under all four project alternatives, would create more expansive viewing opportunities to the north and east towards downtown Oakland and the East Bay Hills. Short-term building demolition activities may result in temporary

visual impacts; however, given the industrial nature of surrounding property in the project area, any visual intrusion would not interfere substantially with use of these two parks.

The JIT would not have any adverse visual impacts to users of Ernie Raimondi Field, Willow Mini-park, Bertha Port Playground, or the Chester Street Playground. These four parksites are located east of the proposed Cypress Freeway currently under construction. In addition, noise walls are proposed around certain sections of the Cypress Freeway that could further block any existing views of the JIT site. The Union Pacific north training wall and Southern Pacific 16th Street Station are not publicly accessible and are located in highly urbanized industrial areas, therefore there would be no visual effects to these resources. There would also be no visual impacts at the 4(f) parks, wildlife area, or ecological reserve adjacent to the Southern Pacific mainline because this is an existing rail corridor and no new construction along these tracks is proposed as part of the JIT.

Wildlife and Vegetation

The 4(f) resources in the JIT project vicinity are located in disturbed, developed areas that support limited wildlife or vegetation resources. Therefore, there would be no impacts to wildlife or vegetation. No severe impacts to wildlife and vegetation would be expected at the 4(f) parks, wildlife area, or ecological reserve located along the Southern Pacific mainline because this is an existing rail corridor and no new construction along these tracks is proposed as part of the JIT.

Water Quality

The 4(f) resources in the project vicinity are located in disturbed, developed areas that do not contain natural water resources. Therefore, there would be no water quality impacts. No severe water quality impacts would be expected at the 4(f) parks, wildlife area, or ecological reserve adjacent to the Southern Pacific mainline because this is an existing rail corridor and no new construction along these tracks is proposed as part of the JIT.

CONCLUSION

Based upon the above information, it is FHWA's determination that the identified potential proximity impacts will not substantially impair the activities, features, or attributes of the section 4(f) resources addressed above and, accordingly, there is no "use" of these resources.

COORDINATION

The Navy and Port have consulted with the SHPO, ACHP, and Oakland Landmarks Preservation Advisory Board and have amended the terms of the 1994 MOA for leasing all of FISCO and the eventual disposal of FISCO to the Port. As described above, these applicable parties have prepared an amended historic mitigation plan, included in Appendix G in Volume II of this EIS/EIR. Additional coordination has taken place with the Department of the Interior,

National Park Service (see Comments and Responses in Volume I, Letter C). The Department of the Interior indicated they have no objections to section 4(f) approval of the proposed project provided the measures to mitigate impacts to historical structures are documented in the final section 4(f) evaluation in the Final EIS/EIR. These measures are included in Appendix G.

CONCLUSION

Based upon the above considerations, it is FHWA's determination that there is no feasible and prudent alternative to the use of land from the NSCO Historic District and that the proposed action includes all possible planning to minimize harm to the Naval Supply Center, Oakland Historic District resulting from such use.

REFERENCES

- California Department of Health Services. 1987. *Guidelines for the Preparation and Content of the Noise Element of the General Plan*. California Office of Planning and Research. Sacramento, California.
- California Department of Transportation and US Federal Highway Administration. 1991. Final Environmental Impact Statement/Report, Proposed Route I-880 Replacement Project from I-980 Interchange to I-80/I-580/I-880 Distribution Structure in the Cities of Oakland and Emeryville, Alameda County, California. Caltrans District 4. San Francisco, CA. September 1991.
- Lotz, R. and L.G. Kurzweil. 1979. "Rail Transportation Noise." Chapter 33 in C. M. Harris (ed.), *Handbook of Noise Control, Second Edition*. McGraw-Hill Book Co. New York, New York. 720 pp.
- Port of Oakland. 1995. Joint Intermodal Terminal Operating Plan. Prepared by Summit/Lynch Consulting Engineers, Inc. February 1995.
- Remington, P.J., M.J. Rudd, and R. Mason. 1980. "Measurement and Diagnosis of Diesel Electric Locomotive Noise," *Noise Control Engineering* 14(2):66-73.
- US Navy. 1990. Environmental Impact Statement for Candidate Base Closures/Realignment in the San Francisco Bay Area, San Francisco, California. Prepared by Tetra Tech, Inc. San Francisco, California. November 1990.

PERSONAL COMMUNICATIONS

- Grace, Steve, Supervisor 1, Oakland City Parks and Recreation Department. October 29, 1996, with Ed Bondoc, Tetra Tech, Inc.
- Gullet, Dave, Area Manager, Oakland City Parks and Recreation Department. November 5, 1996, with Ed Bondoc, Tetra Tech, Inc.

Luckhart, Dean, Port of Oakland. November 6, 1996, personal communication with Ed Bondoc, Tetra Tech, Inc.

Morgan, Roy, Area Administrator, Oakland City Parks and Recreation Department. October 28 and November 5, 1996, with Ed Bondoc, Tetra Tech, Inc.

Yamashita, A., Park Supervisor 2, Oakland City Parks and Recreation Department. November 5, 1996, with Ed Bondoc, Tetra Tech, Inc.

C.2 BCDC BAY PLAN POLICIES

A San Francisco Bay Conservation and Development Commission (BCDC) consistency determination is required under 15 CFR 930 Subpart F to enable FHWA approval of federal-aid ISTEA funds for the first phase of the JIT proposed as part of the Port of Oakland's Vision 2000 Program. The Port submitted a request to BCDC for this consistency determination on June 25, 1997.

The BCDC Bay Plan contains several applicable policies to the proposed joint intermodal terminal. These policies, and how the joint intermodal terminal satisfies the provisions of these policies, is briefly discussed below. BCDC will use this information to determine the consistency of FHWA's joint intermodal terminal funding action with the Bay Plan. FHWA will not approve a record of decision for this project until BCDC has determined that the joint intermodal terminal is consistent with the Bay Plan.

Port Policies

1. Port planning and development should be governed by the policies of the Seaport Plan and other applicable policies of the Bay Plan.
2. Some filling and dredging will be required to provide for necessary port expansion, but any permitted fill or dredging should be in accord with the Seaport Plan.
3. Port priority use areas should be protected for marine terminal and directly-related ancillary activities such as container freight stations, transit sheds and other temporary storage, ship repairing, support transportation uses including trucking and railroad yards, freight forwarders, government offices relocated to the port activity, and marine services.

As described in Section 2.2.2 in Volume I of this EIS/EIR, FISCO is within the Port jurisdiction and is designated as a port priority use area in the April 1996 BCDC and Metropolitan Transportation Commission (MTC) Seaport Plan Update (see Figure 2-1 in Volume I). In conformance with this regional land use designation, the Port's Vision 2000 Program alternatives emphasize port-related activities, as opposed to other types of uses, such as residential. The development

of the Vision 2000 Program project alternatives was predicated largely upon the requirements for effective maritime cargo transportation operations, including provision for enhanced intermodal rail terminal capability.

No dredging or filling is required to construct the joint intermodal terminal under the Minimum Marine/Minimum Rail, Maximum Marine/Minimum Rail, or Reduced Harbor Fill Alternatives. Approximately 32 acres of solid fill is required to construct the joint intermodal terminal under the Maximum Marine/Maximum Rail Alternative.

Water Quality Policies

1. To the greatest extent feasible, the Bay marshes, mudflats, and water surface area and volume should be maintained and, whenever possible, increased. Fresh water inflow into the Bay should be maintained at a level adequate to protect Bay resources and beneficial uses. Bay water pollution should be avoided.
2. Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the Regional Water Quality Control Board's Basin Plan. The policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the Regional Water Quality Control Board, should be the basis for carrying out the Commission's water quality responsibilities.
3. Polluted runoff from projects should be controlled by the use of best management practices in order to protect the water quality and beneficial uses of the Bay, especially where water dispersion is poor and near shellfish beds and other significant biotic resources. Whenever possible, runoff discharge points should be located where the discharge will have the least impact.

No filling or dredging is required to construct the joint intermodal terminal under the Minimum Marine/Minimum Rail, Maximum Marine/Minimum Rail, or Reduced Harbor Fill Alternatives; therefore, there will be no change to water surface area and volume. Under the Maximum Marine/Maximum Rail Alternative, the proposed fill would most likely be bay deposits and would not reduce the overall volume of the bay. The proposed joint intermodal terminal would not affect fresh water inflow into the bay.

As described under the mitigation for Impact 1, Pollutants in Runoff and Adjacent Waters, in Section 5.1.7 of EIS/EIR Volume I, the Port will undertake all necessary measures to avoid bay water pollution and maintain water quality. The Port's stormwater pollution prevention program shall be expanded to include the entire project site (including the area proposed for development of the joint intermodal terminal). Applicable proposed uses in that area shall be

inspected for compliance with the stormwater management program and the Port's BMPs. The Port, in conjunction with the Regional Water Quality Control Board, shall assist tenants with identifying and implementing appropriate BMPs. The Port shall also assist future tenants in retrofitting the stormdrain and sanitary sewer system, if necessary, and developing and implementing operational and facility BMPs for controlling stormwater quality consistent with their stormwater management program and stormwater pollution prevention plan (SWPPP).

Transportation Policies

2. Because of the continuing vulnerability of the Bay for filling for freeways, an effective program should be created to develop, test, and inaugurate new methods of transportation within the Bay Area. This should be undertaken by a regional transportation agency, preferably one that is part of a limited regional government.

The proposed joint intermodal terminal would improve the efficiency of cargo transportation through the Bay Area and beyond and reduce freeway congestion by using rail. For example, container traffic from the Burlington Northern-Santa Fe railyard along Highway I-80 between Richmond and the Port would be removed as a result of the project because this railyard would relocate to the proposed joint intermodal terminal.

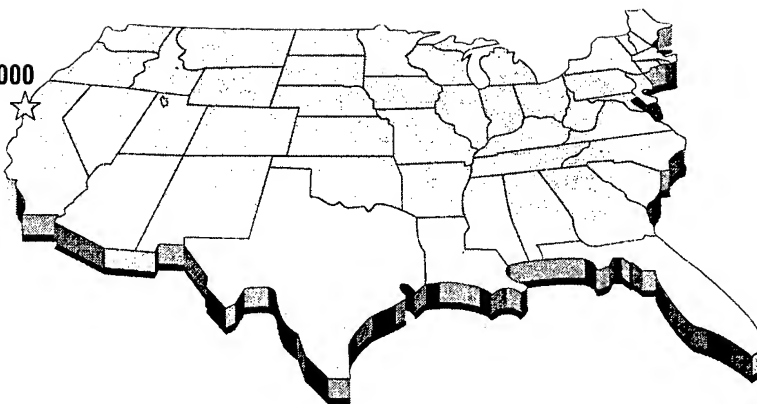
Appearance, Design, and Scenic View Policies

5. To enhance the maritime atmosphere of the Bay Area, ports should be designed, whenever feasible, to permit public access and viewing of port activities by means of (a) viewpoints (e.g., piers, platforms, or towers), restaurants, etc., that would not interfere with port operations, and (b) opening between buildings and other site designs that permit views from nearby roads.

Although not proposed as part of the joint intermodal terminal project, the Port's broader Vision 2000 Program provides for new public access to the Middle Harbor. The Port's preferred public access plan calls for development of a variety of recreation and community facilities in this area, including a snack bar, public pavilion, and fishing pier, that allow for viewing of adjacent port operations at the joint intermodal terminal. The proposed joint intermodal terminal would improve visual access to the bay because it would remove remaining buildings on the FISCO property.

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FISCO/Vision 2000



APPENDIX D PUBLIC INVOLVEMENT

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DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1

Ser 185/EP6-978

May 30, 1996

PUBLIC NOTICE

Subject: Notice of Scoping of Public Concerns regarding a combined Environmental Impact Statement/Environmental Impact Report on the Disposal and Reuse of the Fleet and Industrial Supply Center Oakland, California

The United States Navy in association with the Port of Oakland, California, announces its intent to prepare a joint Environmental Impact Statement /Environmental Impact Report (EIS/EIR) for the proposed disposal and reuse of the Fleet and Industrial Supply Center, Oakland (FISCO), property and structures in Oakland, California. The Defense Base Closure and Realignment Act (Public Law 101-510) of 1990, as implemented by the base closure process of 1995, directed the Navy to close FISCO. The EIS/EIR will be prepared in accordance with Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500 - 1508), the California Environmental Quality Act (CEQA), and Public Law 102-484 Section 2834, as amended by Public Law 104-106 Section 2867. The Navy will be the EIS lead agency for NEPA documentation and the Port of Oakland will be the EIR lead agency for CEQA documentation.

FISCO is located approximately two miles west of the Oakland central business district, on the eastern shore of San Francisco Bay. It consists of approximately 528 acres and has about 125 structures that support general supply operations, waterfront operations and administration.

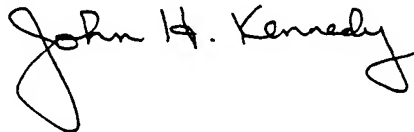
The EIS/EIR will address the potential impacts to the environment that may result from the disposal of the FISCO property and subsequent reuses. FISCO is within the planning jurisdiction of the Port of Oakland. The Port of Oakland Vision 2000 Program proposes development of ship, railroad, and truck freight handling facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California and an intermodal port of national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement.

The development of the Port of Oakland Vision 2000 Program is expected to require additional property outside of the FISCO boundary in order to meet the objectives of the Program. This joint EIS/EIR will provide a program level analysis supporting both the Navy NEPA requirements to describe potential environmental impacts associated with the property disposal at FISCO, and the Port of Oakland CEQA requirement to analyze environmental impacts of implementing the Vision 2000 Program.

The EIS/EIR will evaluate a "No Action" Alternative and several reuse alternatives. The "No Action" Alternative would result in the federal government indefinitely retaining ownership of FISCO property. Under the "No Action" Alternative the Navy would continue leasing property to the Port of Oakland under existing 50 year lease agreement as allowed by Public Law 102-484, and supported by the 1995 base closure decisions. The reuse alternatives are expected to combine the common land use components of a railroad terminal, marine terminals, public waterfront access and marine habitat enhancement. As FISCO is within the Port of Oakland jurisdiction and is designated as a Port Priority use in the April 1996 San Francisco Bay Conservation and Development Commission and the Metropolitan Transportation Commission Seaport Plan Update, alternatives would emphasize port-related activities. Revisions to these alternatives may be developed during the public scoping period. The EIS/EIR will evaluate the potential for environmental impacts to traffic conditions, air quality, biological resources, cultural resources, utilities, and other environmental issues through this scoping process.

Federal, state and local agencies, and interested individuals are encouraged to participate in the scoping process for the EIS/EIR to determine the range of issues and reuse alternatives to be addressed. A public scoping meeting to receive oral and written comments will be held on **Thursday June 13, 1996 at 7:00 p.m.**, at the **McClymonds High School auditorium** located on 2607 Myrtle Street (near 26th Street) in Oakland, California. In the interest of available time, each speaker will be asked to limit oral comments to five (5) minutes.

In addition, written comments may be submitted by July 1, 1996 to Mr. Gary J. Munekawa, Environmental Planning Branch, Code 185GM, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-5006, telephone 415-244-3022, fax 415-244-3737. For further information regarding the Port of Oakland Vision 2000 Program please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Section, 530 Water Street, Oakland, CA 94607, telephone 510-272-1181, or fax 510-465-3755.

A handwritten signature in black ink that reads "John H. Kennedy". The signature is written in a cursive style with a large, stylized initial "J".

**ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT
FOR DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY CENTER
OAKLAND (FISCO), CALIFORNIA
INFORMATION SHEET**

Federal and State Lead Agencies for EIS/EIR Preparation

The United States Navy and the Port of Oakland are preparing a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental consequences potentially resulting from the proposed disposal and reuse of the Fleet Industrial and Supply Center, Oakland (FISCO), property and structures in Oakland, California. The Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as implemented by the 1995 base closure process, directs the Navy to close FISCO. The Navy is authorized to convey the property from Navy ownership under Public Law 102-484, Section 2834, as amended by Public Law 104-106, Section 2867. Full operational closure is scheduled to occur in September of 1998. The Navy will be the lead agency for documentation pursuant to the National Environmental Policy Act (NEPA) as it applies to impacts potentially resulting from disposal of FISCO property and structures. The Port of Oakland will be the lead agency for documentation pursuant to the California Environmental Quality Act (CEQA) as it applies to impacts potentially resulting from implementation of its Vision 2000 Program.

Scope of EIS/EIR Analysis

The EIS/EIR will address the potential impacts to the environment that may result from the disposal of the FISCO property by the Navy and subsequent reuse of FISCO. FISCO is within the planning jurisdiction of the Port of Oakland and has been used as a Navy port supply and administrative facility. The Port of Oakland's Vision 2000 Program proposes development of an intermodal system of ship, railroad, and truck freight facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California, and an intermodal port for national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement.

The EIS/EIR will examine the potential environmental impacts of four Vision 2000 Program alternatives: (1) a Maximum Marine Terminal/Maximum Rail Terminal Alternative (Alternative A); (2) a Minimum Marine Terminal/Minimum Rail Terminal Alternative (Alternative B); (3) a Maximum Marine Terminal/Minimum Rail Terminal Alternative (Alternative C); and (4) a Reduced Fill Alternative (Alternative D). Although revisions to alternatives may be refined during the public scoping period, these four alternatives are expected to combine the common land use components of a joint intermodal terminal, marine terminals, and public waterfront access and marine habitat enhancement. The No Action Alternative would result in the federal government indefinitely retaining ownership of FISCO property. Under the No Action Alternative, the Navy would continue leasing property to the Port under the existing 50-year lease agreement as allowed by Public Law 102-484, as amended, and supported by the 1995 base closure decisions.

Purpose of This Public Scoping Hearing and the Public Involvement Program

The purpose of this public scoping meeting is to solicit public comments regarding the scope and content of the environmental document prior to its publication as a Draft EIS/EIR. Written comments must be postmarked no later than July 1, 1996, in order to assure their full consideration in the EIS/EIR preparation. This hearing is part of the overall public involvement program established for the EIS/EIR for Disposal and Reuse of FISCO. The Port of Oakland also plans additional meetings regarding the overall Vision 2000 Program.

Schedule for Receiving Further Public Input

Further public input will be solicited following publication of the Draft EIS/EIR in early 1997. Public comment on the Draft EIS/EIR will continue through a 45-day public review period and will also include one more public hearing. Written responses to public comments received on the Draft EIS/EIR will be prepared and included in the final document. If you would like to submit written comments or wish to be added to the Navy mailing list for future information, please forward your comments and/or your name and address to the following contact person and address:

Mr. Gary Munekawa, Code 1852GM
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Telephone (415) 244-3022
Fax (415) 244-3737

LOCATION, DESCRIPTION, AND HISTORY OF FISCO

Location and Description of the FISCO Site

FISCO is located approximately two miles west of the City of Oakland central business district, on the eastern shoreline of San Francisco Bay. FISCO consists of approximately 528 acres and is bounded by 7th Street on the north, the Southern Pacific West Oakland railyard on the east, the Union Pacific railyard on the south, and Middle Harbor to the west. Existing facilities include about 125 structures that support general supply operations, waterfront operations, and administration.

History

In 1940, the Port of Oakland sold approximately 400 acres of uplands property to the Navy for one dollar. This property sale was recorded with a reversionary clause stating that the deed would revert back to the Port should the Government decide not to use the property for a naval supply depot, or other naval or military purposes. The Navy subsequently purchased additional lands to expand FISCO which do not revert to the Port of Oakland. Currently, approximately 400 acres of FISCO will automatically revert to the Port of Oakland. An additional 140 acres acquired by the Navy will not automatically revert to the Port of Oakland. The Navy is required to close FISCO and must convey these 140 acres from Navy ownership.

The site purchased by the Navy occupies former tidal marshlands that were dredged and filled in 1940. In 1941, the Naval Supply Center Oakland (FISCO's former name) began support operations for World War II. After the war and through the 1980s, FISCO was the main supply facility supporting Department of Defense activities in the Pacific Basin. The mission of FISCO was to provide supply and support services to fleet units and shore activities, as assigned.

Since the mid-1980s, the Port has been engaged in negotiations to acquire surplus Navy property for development and expansion of maritime and transportation-related facilities. Under the provisions of Public Law 102-484 (Section 2834[b]) of the Defense Authorization Act of 1993, the Navy is authorized to lease portions of FISCO to the Port for a period of 50 years. In late 1993, the Port successfully concluded negotiations with the Navy to acquire the first parcel of 220 acres of Navy property to expand intermodal rail facilities and maritime-cargo-related tenant uses. To date, approximately 135 acres of this leased area is in use as general transportation support activities, including warehousing, container depot activities, transloading, and container freight stations. The Port and Navy are currently working towards leasing the remaining FISCO property. Public Law 102-484 was amended to allow the Navy to transfer the 140 acres to the Port which do not automatically revert to the Port.

Development of the Vision 2000 Program is expected to require additional property outside the FISCO boundary to meet the Program's objectives. This non-Navy property may include the following parcels:

- Union Pacific's West Oakland Railyard owned by the Port (78 acres);
- Union Pacific's West Oakland Railyard owned by Union Pacific (9 acres);
- Southern Pacific's West Oakland Railyard (133 acres);
- Don-Gary lease owned by the Port (9 acres);
- Port-owned property rented on a space assignment basis (5 acres); and
- Oakland Army Base (11 - 26 acres).

VISION 2000 PROGRAM - ALTERNATIVES DEVELOPMENT

The Port of Oakland has investigated several land use configurations that combine different acreages of common land uses. These uses and configurations reflect development opportunities that meet the Port's overriding goals to increase productivity, to improve efficiency of integrated intermodal services, and to provide needed employment and open space opportunities. Land uses included as part of all four Vision 2000 Program alternatives to be analyzed in the EIS/EIR include:

- (a) An intermodal rail terminal (including working tracks, support tracks, and parking) could range between 190 and 340 acres.
- (b) Marine terminals development (including up to five new berths) could range between 122 and 278 acres.
- (c) A public waterfront access and marine habitat enhancement area could range up to 155 acres and would be located in the Middle Harbor Basin.

The attached table and maps are provided to assist you in contributing comments to this public involvement program. They include: (1) A table summarizing the main features of the four Vision 2000 Program alternatives; (2) A site map that identifies individual parcels; (3) A map of the Maximum Marine Terminal/Maximum Rail Terminal Alternative (Alternative A); (4) A map of the Minimum Marine Terminal/Minimum Rail Terminal Alternative (Alternative B); (5) A map of the Maximum Marine Terminal/Minimum Rail Terminal Alternative (Alternative C); and (6) A map of the Reduced Fill Alternative (Alternative D).

ENVIRONMENTAL ISSUES TO BE EVALUATED IN THE EIS/EIR

Although the issues of special concern may change as the EIS/EIR scoping process continues, the following issues have been initially identified as particularly sensitive to future development activities in the Vision 2000/FISCO project area:

- Traffic and circulation impacts associated with railroad, truck, and automobile operations;
- Land use conflicts;
- Socioeconomic impacts regarding changes to local employment, income, population, and housing characteristics, as well as the potential for adverse disproportionate effects on minority and low-income populations;
- Impacts on cultural resources;
- Impacts to sensitive biological habitat along the shoreline;
- Air quality and noise issues related to proposed development;
- Geologic and hydrologic conditions affecting development; and
- Identification and remediation of hazardous materials and hazardous waste.

The EIS/EIR will describe the existing conditions/environmental setting, identify significant and less than significant impacts due to disposal and proposed reuse, and will recommend mitigation measures for significant impacts identified for the following resources or categories of investigation:

Land Use	Geology and Soils	Traffic and Transportation
Socioeconomics	Biological Resources	Utilities
Aesthetics and Scenic Resources	Air Quality	Hazardous Materials and Waste
Public Services	Noise	Cultural Resources
Water Resources	Cumulative Effects	

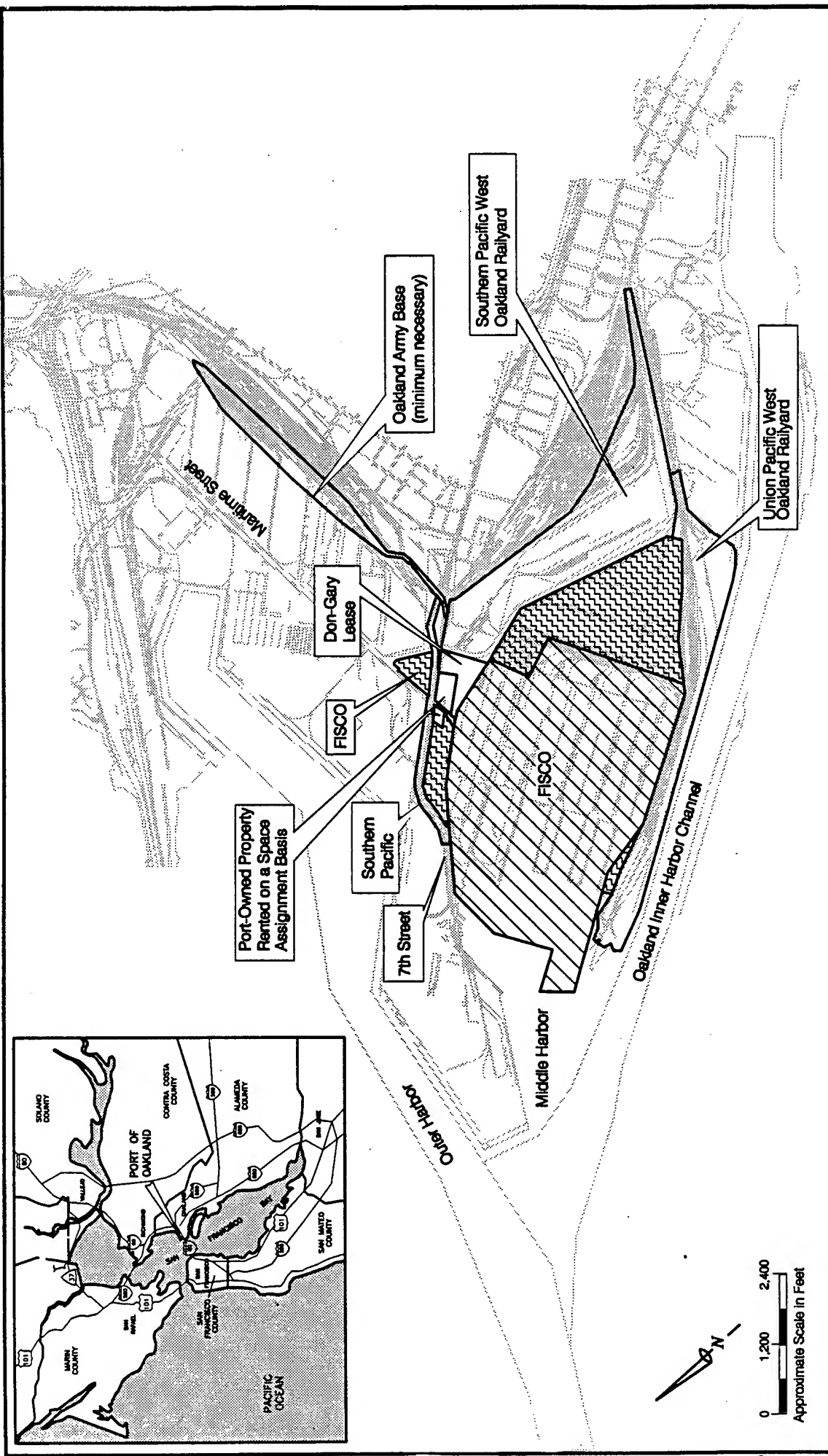
For specific information concerning the Vision 2000 Program, please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Department, at telephone (510) 272-1181 or fax number (510) 465-3755. Thank you for participating with the Navy and the Port in the environmental planning process.

Alternatives Summary
Environmental Impact Statement/Environmental Impact Report for
Disposal and Reuse of Fleet Industrial and Supply Center, Oakland

	Maximum Marine Terminal/Maximum Rail Terminal Alternative (Alternative A)	Minimum Marine Terminal/Minimum Rail Terminal Alternative (Alternative B)	Maximum Marine Terminal/Minimum Rail Terminal Alternative (Alternative C)	Reduced Fill Alternative (Alternative D)
RAILROAD TERMINAL				
Size (acres)	342 +/-	190 +/-	190 +/-	320 +/-
Rail Service	Southern Pacific & Union Pacific	Burlington Northern- Santa Fe	Burlington Northern- Santa Fe	Southern Pacific & Union Pacific
Loading Tracks				
Number of Tracks	7	8	8	7
Total track feet	46,275	35,655	35,655	48,266
Number of Car Spots	151	116	116	156
Support Tracks - Oakland Army Base				
Number of Tracks	24	NA ¹	9 ²	NA
Total Track Feet	76,700	NA	39,657	NA
Number of Car Spots	241	NA	TBD	NA
Acres	26	NA	11	NA
Parking Slots				
Center-Row	3,823	2,950	2,950	4,316
Satellite	1,350	702	702	1,215
Chassis Slots	2,860	900	900	1,500
MARINE TERMINALS				
Size (acres)	260 +/-	100 +/- (Middle Harbor) 22 +/- (Outer Harbor)	290 +/-	278 +/-
Location	Inner Harbor	Middle/Outer Harbors	Inner Harbor	Inner Harbor
Depth (feet)	1,890	2,000/1,400	1,800-2,578	1,726-2,313
Berths				
Number	Five	Two	Five	Five
Length (feet)/berth	1,200	1,200	1,200	1,200
Increase Inner Harbor Channel Width?	no	no	no	yes (new channel width = 730' +/-)
MITIGATION AREA				
Size (acres)	155	55	155	155
Harbor Transportation Center				
Relocate HTC offsite?	yes	no	yes	yes
ONSITE INFRASTRUCTURE				
Relocate Middle Harbor Road?	yes	no	no	yes
Grade-Separated Access @ Main Gate?	no	yes	yes	yes
FILL				
Total Fill Removed (acres)	(-27.82)	(-20.74)	(-27.82)	(-51.96)
Total Fill Placed (acres)	65.12	56.15	38.17	38.17
Total Net Fill (acres)	37.30	35.41	10.35	(-13.79)

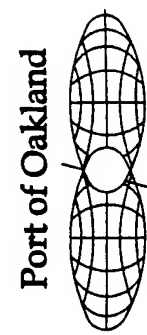
¹ Not applicable

² Another support track storage option is to develop all of it on FISCO property.



Vision 2000 Maritime Development/FISCO

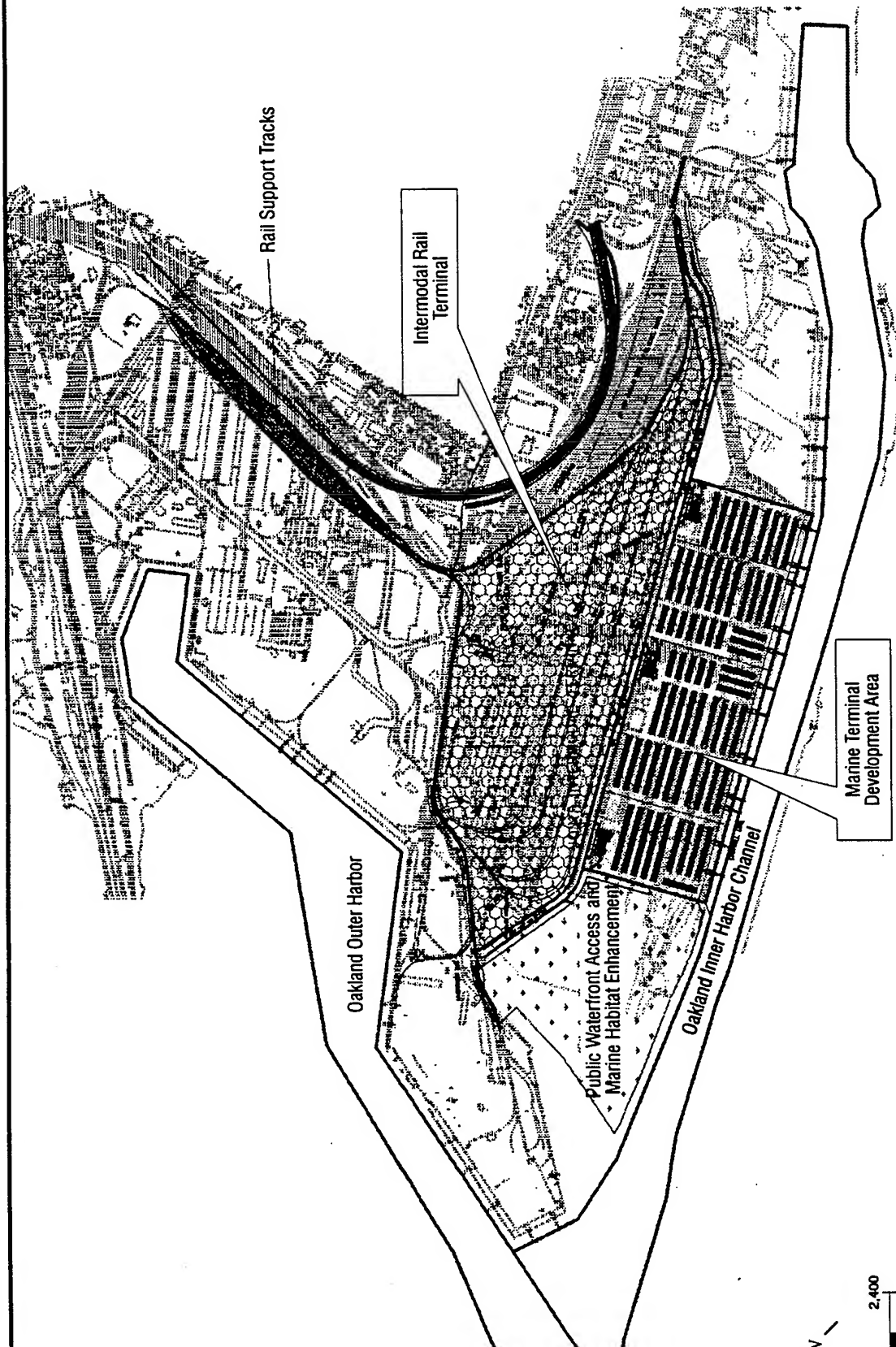
Site Map



Port of Oakland

Source: Port of Oakland, 1996





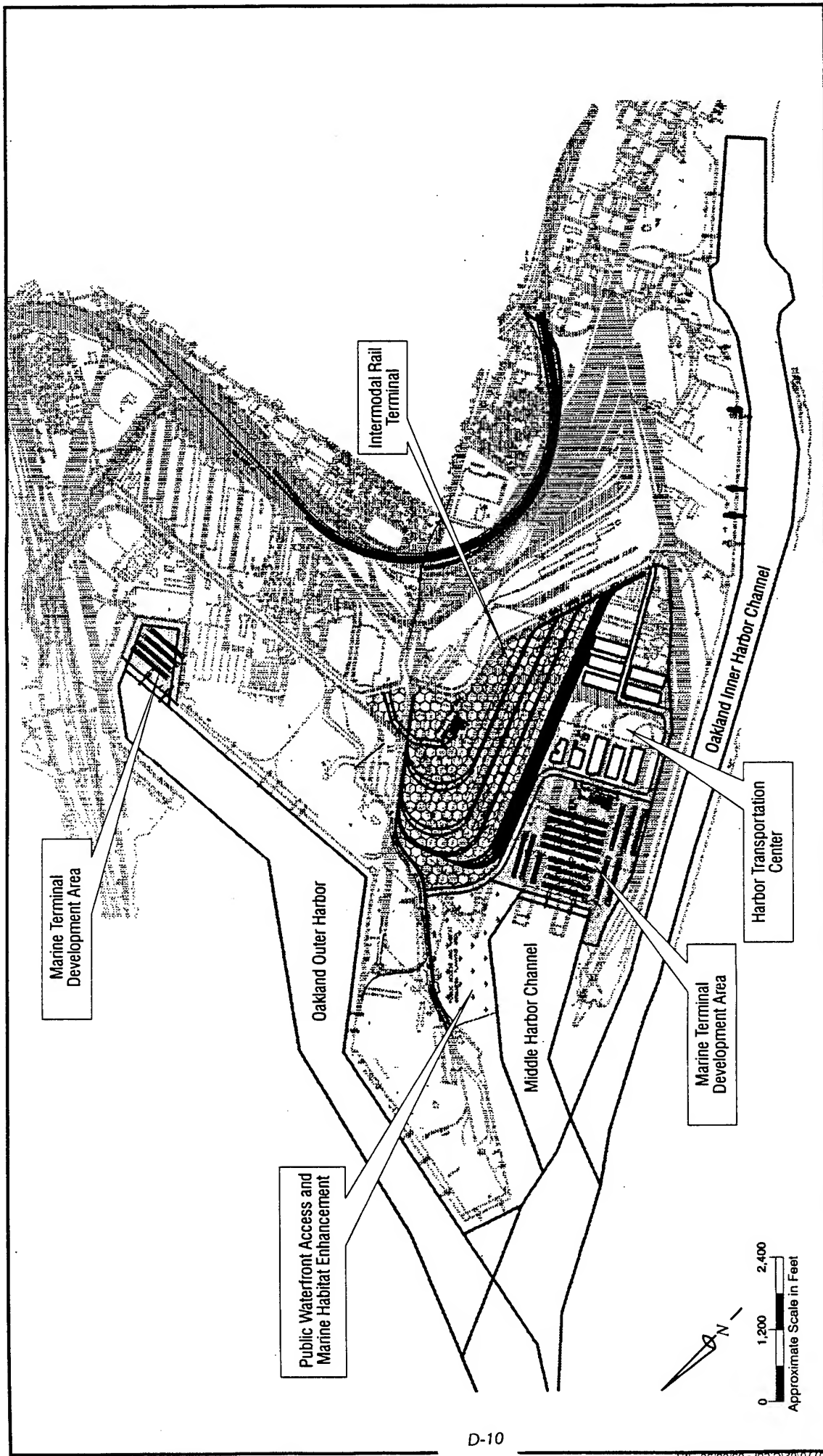
D-9

***Vision 2000 Maritime Development/
FISCO Alternatives***
Maximum Marine Terminal/Maximum Rail Terminal Alternative
(Alternative A)



Source: Port of Oakland, 1996





D-10

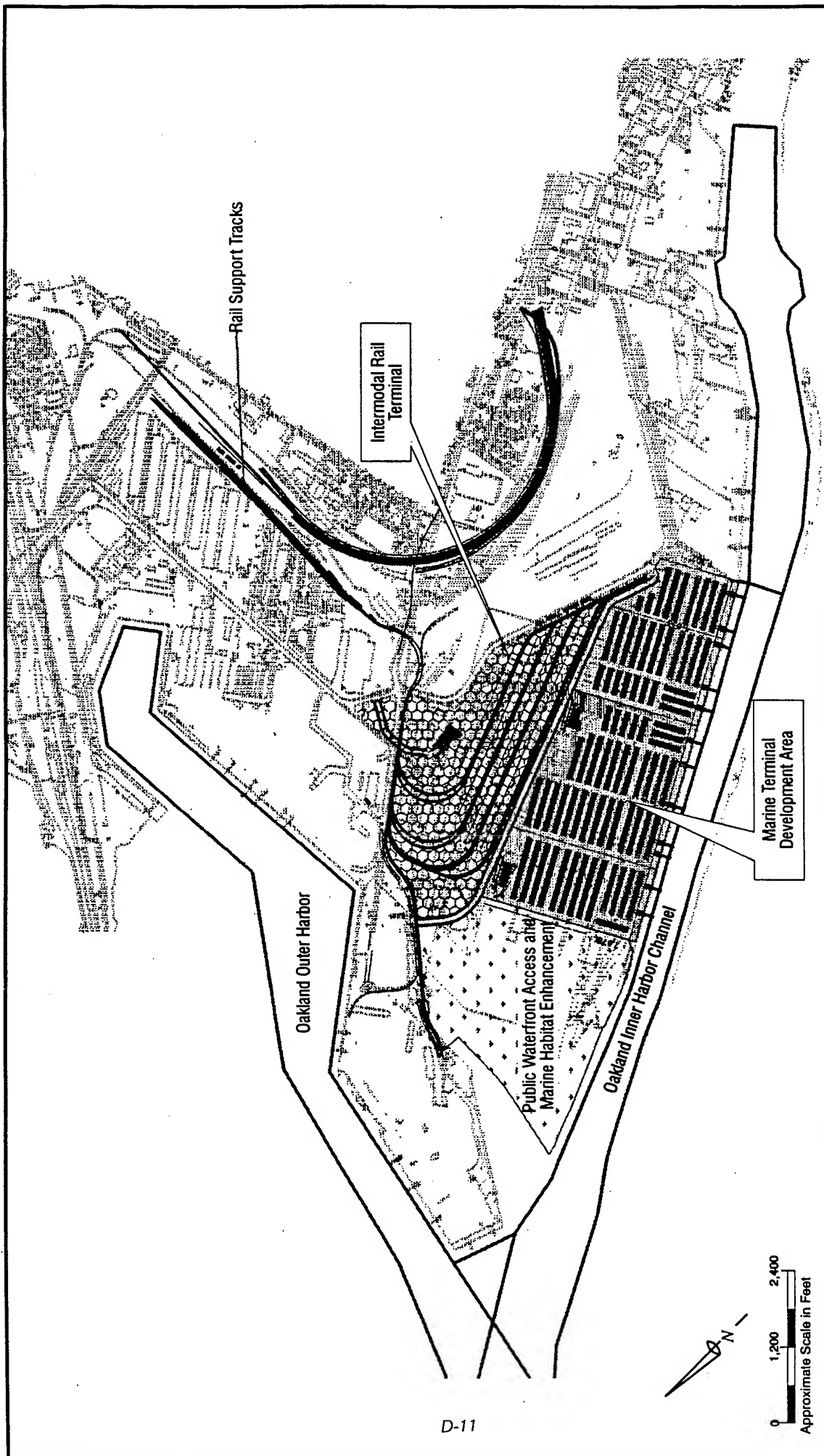


Port of Oakland

Vision 2000 Maritime Development/ FISCO Alternatives Minimum Marine Terminal/Minimum Rail Terminal Alternative (Alternative B)



Source: Port of Oakland, 1996



Vision 2000 Maritime Development/

FISCO Alternatives

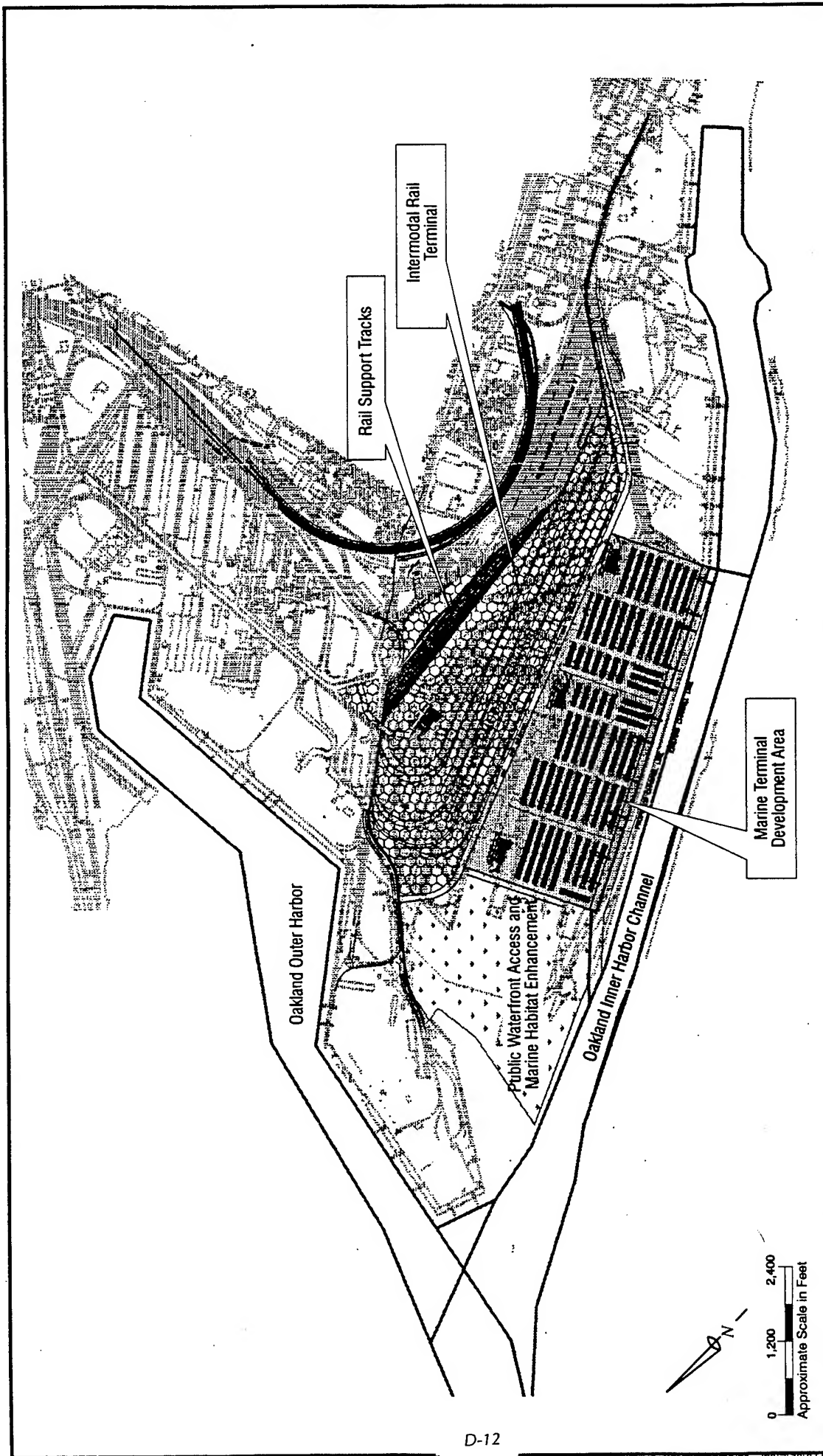
Maximum Marine Terminal/Minimum Rail Terminal Alternative

(Alternative C)

Port of Oakland



Source: Port of Oakland, 1996



***Vision 2000 Maritime Development/
FISCO Alternatives***
 Reduced Fill Alternative
 (Alternative D)



Port of Oakland

Source: Port of Oakland, 1996



[Federal Register: May 30, 1996 (Volume 61, Number 105)]

[Notices]

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[[Page 27056]]

DEPARTMENT OF DEFENSE

Department of the Navy

Notice of Intent To Prepare a Joint Environmental Impact Statement/Environmental Impact Report for the Proposed Disposal and Reuse of the Fleet and Industrial Supply Center Oakland, CA

SUMMARY: Pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500-1508), the California Environmental Quality Act (CEQA), and Public Law 102-484 Section 2834, as amended by Public Law 104-106 Section 2867, the Department of the Navy, in association with the Port of Oakland, California, announces its intent to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed disposal and reuse of the Fleet and Industrial Supply Center, Oakland (FISCO) property and structures in Oakland, California. The Navy will be the lead agency for NEPA documentation and the Port of Oakland will be the lead agency for CEQA documentation. The Defense Base Closure and Realignment Act (Public Law 101-510) of 1990, as implemented by the base closure process of 1995, directed the Navy to close FISCO.

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Seaport Plan Update, alternatives would emphasize port-related activities. Revisions to these alternatives may be developed during the public scoping period. The EIS/EIR will evaluate the potential for environmental impacts to traffic conditions, air quality, biological resources, cultural resources, utilities, and other environmental issues identified through this scoping process.

ADDRESSES: Federal, state and local agencies, and interested individuals are invited to participate in the scoping process to determine the range of issues and reuse alternatives to be addressed. A public scoping meeting to receive oral and written comments will be held on Thursday, June 13, 1996, at 7:00 p.m., at the McClymonds High School auditorium, located at 2607 Myrtle Street (near 26th Street) in Oakland, California. In the interest of available time, each speaker will be asked to limit oral comments to five minutes. In addition, written comments may be submitted by July 1, 1996, to Mr. Gary J. Munekawa, Environmental Planning Branch, Code 185GM, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-5006, telephone (415) 244-3022, fax (415) 244-3737. For further information regarding the Port of Oakland Vision 2000 Program, please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Section, 530 Water Street, Oakland, California 94604, telephone (510) 272-1181, fax (510) 465-3755. If you need special assistance to participate in this meeting, please contact Mr. Munekawa at least 72 hours prior to the meeting.

Dated May 23, 1996

S.L. Haycock,
LCDR, JAGC, USN, Alternate Federal Register Liaison Officer.
[FR Doc. 96-13460 Filed 5-29-96; 8:45 am]
BILLING CODE 3810-FF-P

Governor's Office of Planning and Research1400 Tenth Street
Sacramento, CA 95814OAKLAND
ENVIRONMENTAL DEPT.

06 JUN 10 09:44

DATE: June 4, 1996

RECEIVED

TO: Reviewing Agencies

RE: DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY
SCH# 96062010

Attached for your comment is the Notice of Preparation for the DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY draft Environmental Impact Report (EIR).

Responsible agencies must transmit their concerns and comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

JAMES MCGRATH
PORT OF OAKLAND
530 WATER STREET
OAKLAND, CA 94607

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Kristen Derscheid at (916) 445-0613.

Sincerely,

A handwritten signature in black ink, reading "Antero A. Rivasplata".

ANTERO A. RIVASPLATA
Chief, State Clearinghouse

Attachments

cc: Lead Agency

NOP Distribution List

S = sent by lead agency
X = sent by SCH

Resources Agency	Fish and Game - Regional Offices	Department of Transportation District Contacts	Business, Transportation, & Housing	Regional Water Quality Control Board
<input checked="" type="checkbox"/> Nadell Gayou Resources Agency 1020 Ninth Street, Third Floor Sacramento, CA 95814 916/327-1722 Fax 916/327-1648	<input type="checkbox"/> Richard L. Elliott, Regional Manager Department of Fish and Game 601 Locust Redding, CA 96001 916/225-2363 Fax 916/225-2381	<input type="checkbox"/> Martin Urkofsky Caltrans, District 1 1656 Union Street Eureka, CA 95501 707/445-5812 Fax 707/445-5869	<input type="checkbox"/> Sandy Hensard Caltrans - Division of Aeronautics P.O. Box 942874 Sacramento, CA 94274-0001 916/524-1833 Fax 916/521-9093	<input type="checkbox"/> NORTH COAST REGION (1) 5550 Skyline Blvd., Suite A Santa Rosa, CA 95403 707/576-2220 Fax 707/523-0135
<input type="checkbox"/> Nicole Letitia Dept. of Boating & Waterways 1629 S Street Sacramento, CA 95814 916/445-6281 916/327-7250	<input type="checkbox"/> Ryan Broddrick, Regional Manager Department of Fish & Game 1701 Nimbus Road, Suite A Rancho Cordova, CA 95670 916/558-2900 Fax 916/558-2912	<input type="checkbox"/> Gary Oltremba Caltrans, District 2 P.O. Box 494040 Redding, CA 96049-4040 916/225-3133 Fax 916/225-3146	<input checked="" type="checkbox"/> Alice Huffaker California Highway Patrol Office of Special Projects Planning and Analysis Division 2555 1st Ave. Sacramento, CA 95818 916/657-7222 Fax 916/452-3151	<input checked="" type="checkbox"/> SAN FRANCISCO BAY REGION (2) 2101 Webster, Suite 500 Oakland, CA 94612 510/286-1255 Fax 510/286-1380
<input type="checkbox"/> Elizabeth A. Fuchs California Coastal Commission 45 Fremont Street, Suite 1970 San Francisco, CA 94105-2219 415/904-5200 Fax 415/904-5400	<input checked="" type="checkbox"/> Ken Assen, Acting Regional Manager Department of Fish and Game P.O. Box 47 Yountville, CA 94599 707/944-5518 Fax 707/944-5563	<input type="checkbox"/> Jeff Pulverman Caltrans, District 3 703 B Street Marysville, CA 95901 916/527-3859 Fax 916/323-7669	<input type="checkbox"/> Ron Helgeson Caltrans - Planning P.O. Box 942874 Sacramento, CA 94274-0001 916/533-9966 Fax 916/653-0001	<input type="checkbox"/> CENTRAL COAST REGION (3) 81 Higuera Street, Suite 200 San Luis Obispo, CA 93401-5427 805/549-3147 Fax 805/543-0397
<input type="checkbox"/> Reed Holderman State Coastal Conservancy 1330 Broadway, Suite 1100 Oakland, CA 94612 510/286-1015 Fax 510/286-0470	<input type="checkbox"/> George Nokes, Regional Manager Department of Fish and Game 1234 East Shaw Avenue Fresno, CA 93710 209/445-6152 Fax 209/445-6607	<input checked="" type="checkbox"/> Gary F. Adams Caltrans, District 4 P.O. Box 23660 Oakland, CA 94623-0660 510/286-5578 Fax 510/286-5513	<input type="checkbox"/> Robert Steppy Dept. of General Services 400 R Street, Suite 5100 Sacramento, CA 95814 916/324-0214 Fax 916/322-3987	<input type="checkbox"/> LOS ANGELES REGION (4) 101 Centre Plaza Drive Monterey Park, CA 91754-2156 213/266-7556 Fax 213/266-7600
<input checked="" type="checkbox"/> Deborah Hermann Dept. of Conservation 801 K Street, MS-24-02 Sacramento, CA 95814 916/445-8733 Fax 916/324-0948	<input type="checkbox"/> Environmental Services 330 Golden Shore, Suite 50 Long Beach, CA 90802 310/590-5132 Fax 310/590-5192	<input type="checkbox"/> Lawrence Newland Caltrans, District 5 P.O. Box 8114 San Luis Obispo, CA 93403-8114 805/549-3683 Fax 805/549-3077	<input type="checkbox"/> Office of Local Assistance 501 J Street, Suite 400 Sacramento, CA 95814 916/445-3160	<input type="checkbox"/> CENTRAL VALLEY REGION (5) 3443 Router Road, Suite A Sacramento, CA 95827-3098 916/253-3000 Fax 916/253-3015
<input type="checkbox"/> Gary Britner Dept. of Forestry 1416 Foresty, Room 1516-2 Sacramento, CA 95814 916/653-9451 Fax 916/653-0989	<input type="checkbox"/> California Energy Commission 1516 Ninth Street, MS-15 Sacramento, CA 95814 916/654-3944	<input type="checkbox"/> Marc Birnbaum Caltrans, District 6 P.O. Box 12616 Fresno, CA 93718-2616 209/448-4088 Fax 209/488-4101	<input type="checkbox"/> Mike Tollstrup Air Resources Board 2020 L Street Sacramento, CA 95815 916/322-8267 Fax 916/322-5982	<input type="checkbox"/> FRESNO BRANCH OFFICE 3614 East Ashlan Avenue Fresno, CA 93726 209/445-5116 Fax 209/445-5910
<input type="checkbox"/> Hans Kreutzberg Office of Historic Preservation P.O. Box 942896 Sacramento, CA 94296-0001 916/653-9107 Fax 916/653-9824	<input checked="" type="checkbox"/> Native American Heritage Comm. 915 Capitol Mall, Room 364 Sacramento, CA 95814 916/653-4082 Fax 916/657-5390	<input type="checkbox"/> Stephen J. Buswell Caltrans, District 7 120 South Spring Street Los Angeles, CA 90012 213/897-4429 Fax 213/897-4358	<input checked="" type="checkbox"/> Mark deBle Calif. Waste Management Board 8800 Cal Center Drive Sacramento, CA 95826 916/255-4164 Fax 916/255-4071	<input type="checkbox"/> REDDING BRANCH OFFICE 415 Knollcrest Drive Redding, CA 96002 916/224-4845 Fax 916/224-4857
<input type="checkbox"/> Ken Pierce Dept. of Parks and Recreation P.O. Box 942896 Sacramento, CA 94296-0001 916/653-0538	<input type="checkbox"/> Douglas Long Public Utilities Commission 505 Van Ness Avenue San Francisco, CA 94102 415/703-2011 Fax 415/703-1965	<input type="checkbox"/> Harvey Sawyer Caltrans, District 8 P.O. Box 231 San Bernardino, CA 92402 909/383-4808 Fax 909/383-7934	<input checked="" type="checkbox"/> Wayne Hubbard State Water Resources Control Board Division of Clean Water Programs P.O. Box 944212 Sacramento, CA 94244-2120 916/227-4408 Fax 916/227-4549	<input type="checkbox"/> LAHONTAN REGION (6) 2092 Lake Tahoe Boulevard South Lake Tahoe, CA 96150 916/542-5400 Fax 916/544-2271
<input type="checkbox"/> Wendy Halverson-Martin Reclamation Board 1020 Ninth Street, Room 240 Sacramento, CA 95814 916/327-1531 Fax 916/327-1600	<input checked="" type="checkbox"/> Betty Silva State Lands Commission 100 Howe Avenue, Suite 100 South Sacramento, CA 95825 916/574-1872 Fax 916/574-1885	<input type="checkbox"/> Robert Ruhnke Caltrans, District 9 500 South Main Street Bishop, CA 93514 619/872-0689 Fax 619/872-0678	<input type="checkbox"/> Phil Zanliner State Water Resources Control Board Division of Water Quality P.O. Box 944213 Sacramento, CA 94244-2130 916/657-0912 Fax 916/657-2388	<input type="checkbox"/> VICTORVILLE BRANCH OFFICE 15428 Civic Drive, Suite 100 Victorville, CA 92392-2359 619/241-6583 Fax 619/241-7308
<input type="checkbox"/> Steve McAdam S.F. Bay Conservation & Dev't. Comm. 30 Van Ness Avenue, Room 2011 San Francisco, CA 94102 415/557-3686 Fax 415/557-3767	<input checked="" type="checkbox"/> Gerald R. Zimmerman Colorado River Board 770 Fairmont Avenue, Suite 100 Glendale, CA 91203-1035 818/543-4676 Fax 818/543-543-4685	<input type="checkbox"/> Dana Cowell Caltrans, District 10 P.O. Box 2048 Stockton, CA 95201 209/948-7906 Fax 209/948-7906	<input type="checkbox"/> Mike Falkenstein State Water Resources Control Board Division of Water Rights 901 P Street, 3rd Floor Sacramento, CA 95814 916/657-1377 Fax 916/657-1485	<input type="checkbox"/> COLORADO RIVER BASIN REGION (7) 73720 Fred Waring Drive, #100 Palm Desert, CA 92260-2564 619/346-7491 Fax 619/341-6820
<input checked="" type="checkbox"/> Nadell Gayou Department of Water Resources 1020 Ninth Street, Third Floor Sacramento, CA 95814 916/327-1722 Fax 916/327-1648	<input type="checkbox"/> Thomas Ottoman Office of Emergency Services P.O. Box 29998 San Francisco, CA 94129 415/666-9300	<input type="checkbox"/> Lou Salazar Caltrans, District 11 P.O. Box 85406, MS S-5 2829 Juan Street San Diego, CA 92186-5406 619/688-6002 Fax 619/688-2511	<input type="checkbox"/> Mike Falkenstein State Water Resources Control Board Division of Water Rights 901 P Street, 3rd Floor Sacramento, CA 95814 916/657-1377 Fax 916/657-1485	<input type="checkbox"/> SANTA ANA REGION (8) 3737 Main Street, Suite 500 Riverside, CA 92501-3339 714/782-4130 Fax 909/781-6288
<input type="checkbox"/> Kim Dinh Dept. of Health 601 N. 7th Street, PO Box 942732 Sacramento, CA 94234-7320 916/323-6111 Fax 916/327-6092	<input type="checkbox"/> Debby Eddy Delta Protection Commission P.O. Box 530 Walnut Grove, CA 95690 916/776-2290 FAX 776-2293	<input type="checkbox"/> Aileen Kennedy Caltrans, District 12 2501 Pullman St. Santa Ana, CA 92705 714/724-2239 Fax 714/724-2592	<input type="checkbox"/> Phil Zanliner State Water Resources Control Board Division of Water Quality P.O. Box 944213 Sacramento, CA 94244-2130 916/657-0912 Fax 916/657-2388	<input type="checkbox"/> SAN DIEGO REGION (9) 9771 Claremont Mesa Blvd., Suite B San Diego, CA 92124-1331 619/467-2952 Fax 619/571-6972
				OTHER:
				OTHER:

UNITED STATES NAVY

NEWS RELEASE

ENGINEERING FIELD ACTIVITY WEST

NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)

900 COMMODORE DRIVE • SAN BRUNO, CA 94066

FOR IMMEDIATE RELEASE
Release # 96-04

For more information contact
Jeff Young
Phone (415) 244-3041
Fax: (415) 244-3010

Navy and Port of Oakland to prepare FISCO Environmental Impact Statement

The United States Navy and the Port of Oakland will prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental impacts of disposal and reuse of the Fleet Industrial and Supply Center, Oakland (FISCO).

The Navy will be the lead agency for National Environmental Policy Act (NEPA) documentation and the Port of Oakland will be the lead agency for California Environmental Quality Act (CEQA) documentation. The Defense Base Closure and Realignment Act of 1990, as implemented by the 1995 base closure process, directs the Navy to close FISCO.

The EIS/EIR will address potential impacts to the environment that may result from the conveyance of the FISCO property by the Navy and subsequent reuse of FISCO by the community.

FISCO is within the planning jurisdiction of the Port of Oakland and has been used as a Navy port supply and administrative facility. The Port of Oakland's "Vision 2000" program proposes development of an intermodal system of ship, railroad, and truck freight facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California, and an intermodal port for national and international commerce. Vision 2000 also includes development of public waterfront access and marine habitat enhancement. Development of the Vision 2000 program is expected to require additional property outside of the FISCO boundary in order to meet its objectives.

The EIS/EIR will examine the potential environmental impacts of four Vision 2000 Program alternatives. The "No Action Alternative," which would result in the federal government indefinitely retaining ownership of FISCO property, will also be evaluated. Under the No Action Alternative, the Navy would continue leasing property to the Port under the existing 50-year lease agreement as allowed by Public Law 102-484, and supported by the 1995 base closure decisions.

Environmental issues addressed in the EIS/EIR are expected to include land use, visual resources, socioeconomics, public services, cultural resources, biological resources, geology and soils, water resources, air quality, noise, traffic and transportation, utilities, and hazardous materials and waste.

The Draft EIS/EIR is expected to be published in early 1997. A public hearing and a 45-day review period will follow the publication and distribution of the Draft EIS/EIR.

A public hearing will be held on Thursday, June 13, 1996, at 7 p.m., at McClymonds High School, 2607 Myrtle Street, in Oakland. The purpose of this hearing is to receive written and verbal comments regarding the potential environmental impacts of disposal and reuse of FISCO. A brief presentation will precede the request for public comment. Navy and Port of Oakland representatives will be available at the hearing to receive comments from the public regarding issues of concern. It is important that federal, state, and local agencies and interested individuals take this opportunity to identify environmental concerns that should be addressed during the preparation of the EIS/EIR.

Agencies and the public are also invited and encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. To be most helpful, scoping comments should clearly describe specific issues or topics which the commentor believes the EIS/EIR should address.

The public is invited to submit written comments by July 1, 1996 to Gary Munekawa, Code 1852, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-2402, (415) 244-3022, Fax (415) 244-3737. For further information regarding the Port of Oakland Vision 2000 Program, contact Loretta Meyer, Port of Oakland, 530 Water Street, Oakland, California 94604-2064, telephone (510) 272-1181, fax (510) 465-3755.

UNITED STATES NAVY

FACT SHEET

ENGINEERING FIELD ACTIVITY WEST
NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)
900 COMMODORE DRIVE • SAN BRUNO, CA 94066

For more information contact

Jeff Young

Phone (415) 244-3041

Fax: (415) 244-3010

- Site:** Fleet Industrial Supply Center, Oakland (FISCO)
- Location:** In the vicinity of the Port of Oakland's Middle Harbor at the northwest mouth of the Oakland estuary.
- Mission:** FISCO (formerly called Naval Supply Center, Oakland), is the principal facility supporting Department of Defense activities in the Pacific Basin and is the Navy's largest west coast supply point. It's primary function is to provide support and supply services to fleet units and shore activities. In general, the facility has been used for storage and supply purposes. Very little manufacturing or industrial activity has occurred over the years.
- Size:** The installation encompasses approximately 529 acres and has about 125 structures.
- Opened:** The facility was established in 1941 to support the Navy during World War II.
- Closure:** September 1998
- BRAC'd:** BRAC 4, 1995
- Status:** Daily operations will cease at the base in September 1998. The installation will then be placed in a caretaker status, with the Navy's Engineering Field Activities West acting as the landlord, until the property is conveyed to the Port of Oakland. Special legislation that allows the Navy to convey the property directly to the Port of

Oakland. Approximately 134 acres of property is now being leased to the Port.

Cleanup: The California Environmental Protection Agency is the lead regulatory agency responsible for the cleanup. Several environmental investigations have been conducted between 1977 and the present time, with a total of 99 sites evaluated. Of those sites, 74 showed no potential impact to the environment or public health. The Navy will propose no cleanup action on 12 sites; 13 sites will be addressed in a Record of Decision (ROD). The ROD is expected to be completed by October 1997. Contamination, including Volatile Organic compounds and Total Petroleum hydrocarbons, has occurred in areas where paints, solvents, and hazardous materials were used and/or stored. Preliminary estimates place the cleanup costs at approximately \$42,300,000.

SCOPING NEWSPAPER ADVERTISEMENTS

The following newspaper advertisement announcing the preparation of the Disposal and Reuse of FISCO/Vision 2000 Maritime Development EIS/EIR and the start of the public scoping process was published in the following papers:

San Francisco Chronicle - Sunday, June 2, 1996, and Monday June 3, 1996.

Oakland Tribune - Sunday, June 2, 1996, and Monday June 3, 1996.

Oakland Post - Sunday, June 2, 1996.

PUBLIC NOTICE

The United States Navy and the Port of Oakland announce their intent to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate the environmental impacts of disposal and reuse of the Fleet Industrial and Supply Center, Oakland (FISCO) in Oakland, CA. The Navy will be the lead agency for National Environmental Policy Act (NEPA) documentation and the Port of Oakland will be the lead agency for California Environmental Quality Act (CEQA) documentation. The Defense Base Closure and Realignment Act (Public Law 101-510) of 1990, as implemented by the 1995 base closure process, directs the Navy to close FISCO. The Navy has the authority to dispose of FISCO under Public Law 102-484, Section 2834, as amended by Public Law 104-106, Section 2867, in order to implement the 1995 base closure process decisions.

The EIS/EIR will address the potential impacts to the environment that may result from the disposal of the FISCO property by the Navy and subsequent reuse of FISCO. FISCO is within the planning jurisdiction of the Port of Oakland and has been used as a Navy port supply and administrative facility. The Port of Oakland's Vision 2000 Program proposes development of an intermodal system of ship, railroad, and truck freight facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California, and an intermodal port for national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement. Development of the Vision 2000 Program is also expected to require additional property outside of the FISCO boundary in order to meet the Program's objectives.

The EIS/EIR will examine the potential environmental impacts of four Vision 2000 Program alternatives. The No Action Alternative, which would result in the federal government indefinitely retaining ownership of FISCO property, will also be evaluated. Under the No Action Alternative, the Navy would continue leasing property to the Port under the existing 50-year lease agreement as allowed by Public Law 102-484, and supported by the 1995 base closure decisions. Probable environmental issues that will be addressed in the EIS/EIR include, but are not limited to, land use, visual resources, socioeconomic, public services, cultural resources, biological resources, geology and soils, water resources, air quality, noise, traffic and transportation, utilities, and hazardous materials and waste. The Draft EIS/EIR is due to be published in early 1997. A public hearing and a 45-day review period will follow the publication and distribution of the Draft EIS/EIR.

PUBLIC SCOPING HEARING

will be held

Thursday, June 13, 1996, at 7:00 p.m.

at the following address:

**McCLYMONDS HIGH SCHOOL
2607 MYRTLE STREET
OAKLAND, CA**

The purpose of this hearing is to receive written and verbal comments regarding the potential environmental impacts of the disposal and proposed reuse of FISCO. A brief presentation will precede the request for public comment. Navy and Port of Oakland representatives will be available at this hearing to receive comments from the public regarding issues of concern to the public. It is important that federal, state, and local agencies and interested individuals take this opportunity to identify environmental concerns that should be addressed during the preparation of the EIS/EIR.

Agencies and the public are also invited and encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. To be most helpful, scoping comments should clearly describe specific issues or topics which the commentator believes the EIS/EIR should address. Written statements must be received at the address below no later than July 1, 1996.

**MR. GARY MUNAKAWA, CODE 1852GM
ENGINEERING FIELD ACTIVITY WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CA 94066-5006
Telephone (415) 244-3022
Fax (415) 244-3737**

For further information regarding the Vision 2000 Program, contact Ms. Loretta Meyer, Port of Oakland, 530 Water Street, Oakland, California 94607, telephone (510) 272-1181, fax (510) 465-3755.

Table D-1
Scoping Summary

Commentor	Form	Issues
David Farrel, US Environmental Protection Agency, Region 9	Letter Dated 6/26/96	<ul style="list-style-type: none"> • Develop alternatives not related to the Vision 2000 Program. • Define all parameters (time, geographic area) relevant to the analysis. • Establish clear statement of purpose and need. • Include non-FISCO property part of Vision 2000 in setting section. • Include analysis of cumulative effects. • Develop "preferred" and "environmentally-preferred" alternatives. • Develop a preferred alternative that balances environmental quality and economic opportunity. • Describe nearby residential areas and potential impacts to these areas. • Describe impact on minority community and low-income population. • Present opportunities for the affected communities to provide input. • Identify specific potential mitigation measures. • Discuss the current air quality status, including: <ul style="list-style-type: none"> – air quality conditions, problems, and planning. – air quality impacts from proposed action. – conformity with State Implementation Plan. – mitigation measures. – project alternatives. • Identify existing traffic, circulation, and parking patterns. • Identify health, safety, and annoyance issues related to traffic. • Analyze reuse in context of relevant transportation changes. • Identify transit needs related to proposed action. • Work with regional partners to identify impacts from reuse. • Analyze potential future uses for the Oakland Army Base, if to be included as part of the Vision 2000 Program. • Identify existing and projected land use conflicts in West Oakland. • Identify dredging requirements associated with each alternative. • Identify justification for the amount of dredging required. • Characterize baseline conditions for wetlands, aquatic systems, estuaries, and other ecological habitats. • Include a mitigation plan that ensures no net loss of wetlands. • Comply with the following provisions of the Clean Water Act: <ul style="list-style-type: none"> – there is no practicable alternative. – will not contribute to the degradation of waters. – will not violate water quality standards, toxic-effluent standards, or jeopardize the continued existence of species or their habitats. – all steps are taken to minimize adverse impacts. • Discuss impacts on listed, protected, and endangered species. • Identify critical fisheries habitat. • Identify hazardous materials storage, disposal, contamination history. • Discuss pollution prevention, energy conservation, and waste minimization. • Address potential for adverse health impacts to fishermen. • Identify all archaeological, prehistoric, and historic resources. • Assess impacts to aesthetics, visual resources, or Bay access. • Identify noise contours associated with existing and proposed activities. • Define baseline conditions. • Assess impacts by comparing future conditions to baseline conditions. • Define significance criteria.

**Table D-1
Scoping Summary**

Commentor	Form	Issues
Nicole Gauthier, US Army Corps of Engineers	Letter Dated 6/12/96	<ul style="list-style-type: none"> • Meet with Sacramento District to discuss reuse of the Oakland Army Base.
John Turner, State of California Department of Fish and Game	Letter Dated 6/25/96	<ul style="list-style-type: none"> • Identify and remediate hazardous waste. • Identify natural resources damages from hazardous materials. • Identify impacts on sensitive biological habitat along the shoreline. • Identify impacts on sensitive terrestrial resources. • Develop mitigation for loss of fish and wildlife resources..
Joe Browne, State of California Department of Transportation	Letter Dated 6/13/96	<ul style="list-style-type: none"> • Complete traffic study to determine I-880 and I-980 impacts including: <ul style="list-style-type: none"> – trip generation, distribution, and management. – average daily traffic, peak hour volumes, and cumulative traffic. – highway and non-highway improvements and services mitigations. – mitigation financing and scheduling. – mitigation implementation and monitoring responsibilities.
Liz Black, Historical Resources Information System	Letter Dated 7/3/96	<ul style="list-style-type: none"> • Recommend conducting a study to determine if the project area has any unrecorded archaeological sites. • Stop work in any area where archaeological resources are discovered.
Marc Roddin, Metropolitan Transportation Commission	Letter Dated 6/4/96	<ul style="list-style-type: none"> • Consider various channel dredging levels to support marine terminals. • Identify assumptions and methodology for traffic circulation analysis. • Document transportation model used. • Document trip generation, distribution, modal split, and assignment equations in model. • Include only fully funded projects in transportation network. • Provide data supporting the choice of travel behavior assumptions. • Allow for a worst case analysis of traffic impacts. • Present traffic information for interstate, arteries, and internal roads. • Include volume to capacity ratios and level of service with implementation only of fully funded transportation projects. • Discuss unfunded or partly funded transportation projects as project mitigation, with potential funding sources and budgets identified. • Use 2010 or 2015 as analysis year. • Evaluate reducing demand for single occupant automobile. • Evaluate as a partial reuse an overnight truck service complex.
Linda Scourtis, San Francisco Bay Conservation and Development Commission	Letter Dated 7/1/96	<ul style="list-style-type: none"> • Describe BCDC consistency determination authority. • Develop reuse that requires the least possible amount of Bay fill. • BCDC supports Alternative D; removes the greatest amount of fill. • Indicate fill requirement for marine terminal near Berth 10. • Detail new and additional maintenance dredging requirements. • Clarify the increased dredging requirement necessary to create Middle Harbor Channel. • Follow State Water Resources Control Board and Regional Water Quality Control Board policies on water quality. • Maintain/increase bay marsh, mudflat, and water surface area/volume. • Protect marshes and mudflats. • Protect fish and wildlife habitats. • Improve public access to maximum extent possible. • Include appropriate mitigation measures.

Table D-1
Scoping Summary

Commentor	Form	Issues
Brian Wiese, San Francisco Bay Trail, Association of Bay Area Governments	Letter Dated 6/25/96	<ul style="list-style-type: none"> Address potential opportunities for shoreline public access and the provision of safe access to and on the site for recreational users and commuting cyclists.
Jean Hart, Alameda County Congestion Management Agency	Letter Dated 6/20/96	<ul style="list-style-type: none"> Submit land use data to conduct a CMA-traffic analysis of the project. Include a financial program in transportation mitigation measures. Consider participation in the I-880 corridor transportation planning process as a general mitigation measure for transportation impacts. Address all impacts on the metropolitan transportation system. Analyze roadway level of service standards for 2000 and 2005. Satisfy CMA criteria with transportation mitigation measures. Analyze transit level of service standards, including transit funding as a mitigation measure. Consider impact on transportation demand management measures. Discuss funding sources for roadway and transit improvements.
Colette Meunier, City of Alameda	Letter Dated 6/28/96	<ul style="list-style-type: none"> Discuss impact of project on traffic through Webster and Posey Tubes. Discuss impact of project on increasing truck traffic on I-880 and I-980. Discuss impact of project on Sacramento/San Jose railroad corridor. Discuss impact of project on Alameda/Oakland Ferry. Discuss impact on shoreline access and Bay Trail. Discuss impact on transportation corridor providing regional access between NAS Alameda and I-880 and I-980. Evaluate suitability of site to accommodate the projected regional need for container port facilities.
Kay Miller, Alameda Reuse Redevelopment Authority	Letter Dated 7/1/96	<ul style="list-style-type: none"> Discuss impact on air cargo operations at Oakland Airport. Concur with comments made by City of Alameda in June 28 letter. Evaluate visual impact, especially on proposed NAS Alameda reuse. Evaluate cumulative impacts with NAS Alameda reuse plan.
Various Signatories, Secondary Materials Industries Working Group	Letter Dated 6/24/96	<ul style="list-style-type: none"> Analyze impacts of removing structures. Analyze waste generated during new construction. Reuse entire buildings if possible; if not, salvage reusable portions and recycle unusable portions of the structure. Dispose of, properly, materials containing asbestos or lead-based paint. Do not burn or mulch wood. Deconstruction has beneficial socioeconomic impacts. Examine the cumulative impact of structure disposal on area landfills. Deconstruction can save historically significant portions of buildings or provide replacement parts for other buildings.
Jean Matsuura, League of Women Voters of the Bay Area	Letter Dated 6/30/96	<ul style="list-style-type: none"> Provide an alternative that does not require placing any fill. Present impacts to natural resources, especially wetlands, eelgrass beds, and endangered species, such as least terns and brown pelicans.
Arthur Feinstein, Golden Gate Audubon Society	Letter Dated 6/28/96	<ul style="list-style-type: none"> Consider impacts on California least tern. Consider impacts to eelgrass beds, if any. Present a "no fill" alternative.
William Coburn, Oakland Heritage Alliance	Letter Dated 6/20/96	<ul style="list-style-type: none"> Include one alternative that minimizes the effect on historic structures. Consider an alternative that would retain all or a portion of the historic resources.

Table D-1
Scoping Summary

Commentor	Form	Issues
Judith Bloom	Verbal Comment on 6/13/96	<ul style="list-style-type: none"> • Learned of the meeting at 5:00 p.m. on the day of the meeting. • Make Vision 2000 materials clearer. • Include explanation of alternatives impact on community concerns. • Create an electric truck plant to support Port activities. • Poor attendance at hearing because public lost faith in Navy promises. • Wants to understand how the joint intermodal terminal would work and concluded that such a terminal might even mitigate truck effects.
George Burt	Verbal Comment on 6/13/96	<ul style="list-style-type: none"> • Attendance at the hearing was too low. • Vision 2000 is a project that Oakland can be proud of. • Port's presentation and public information package is insufficient. • Port must communicate with citizens and businesses. • Vision 2000 will satisfy employment and warehouse space needs. • West Oakland Commerce Association endorses Vision 2000.
William Chorneau	Verbal Comment on 6/13/96	<ul style="list-style-type: none"> • NEPA process could be challenged based on inadequate outreach. • Received the meeting notice only a week ago and did not have enough time to mobilize concerned citizens. • Recommended that the meeting information be printed on the first page of the scoping mailing. • Requested public access in the Port's proposal. • Outlined a list of components that should be presented in the EIS/EIR, all of which are required features of NEPA and CEQA, and are presented in his letter on behalf of the Coalition for West Oakland Revitalization.
William Chorneau, Coalition for West Oakland Revitalization	Letter Dated 6/27/96	<ul style="list-style-type: none"> • Identify different lead agency; perhaps Oakland Office of Economic Development. • Schedule second hearing; first notice of hearing was inadequate. • Expand scope to include issues important to entities other than Port. • Describe the "no project" alternative in a detailed manner. • Include an alternative that does not include the nonreversionary land. • Include alternatives that provide more public access and marine habitat enhancement by decreasing the size of rail or marine terminals. • Identify mitigation measures for impacts, especially socioeconomic. • Present setting, impacts, and mitigation in one section. • Setting, as stated in CEQA, should describe the study area "as it exists before the commencement of the project." • Present setting from site, local, and regional perspective. • Separate impacts related to construction and operation. • Demonstrate how thresholds of significance are identified. • Show level of significance for each impact before and after mitigation. • Cover employment generation, housing, public access and wildlife habitat, transportation, public services, cumulative impacts and growth inducing impacts, air quality, water, noise, visual, and land use. • Address the following additional mitigations: <ul style="list-style-type: none"> - additional shoreline access. - non-polluting alternatives to internal combustion engines. - buffer zone of trees. - truck emission standards. - adequate on-site truck parking - Port funding for a new West Oakland park.

Table D-1
Scoping Summary

Commentor	Form	Issues
Margaret Gordon	Verbal Comment on 6/13/96	<ul style="list-style-type: none"> Public outreach process was not adequately conducted. Hearing conflicted with other community meetings. Proposed a door-to-door outreach program. No provisions for nonprofits to acquire FISCO property. Port and City formed a partnership without involving citizens.
Harold Logwood	Verbal Comment on 6/13/96	<ul style="list-style-type: none"> Received letter; saw public notices in both Oakland newspapers. Navy made a good effort to inform the public of FISCO disposal. Applauded the Navy for initiating a collaborative effort. Asked that the Navy not be alarmed by the poor attendance but to continue its efforts to keep the community involved.
Nancy Nadel	Letter Dated 6/10/96 and read by Ellen Parkinson on 6/13/96	<ul style="list-style-type: none"> Include original documents describing land transfer from City to Navy. Because there was no public involvement in amending PL 102-484, alternatives that do not include nonreversionary land should be developed. These alternatives should attract businesses that: (1) create more jobs than proposed Port alternatives; (2) benefit from close proximity to the Port; (3) use recycled materials; (4) conserve air, water, and energy; (5) do not create land fill waste; (6) promote diversity; and (7) ensure minimal negative environmental impact. Explore the following mitigations: (1) give West Oakland residents first priority for new jobs; (2) establish a community task force for traffic circulation issues; (3) establish emission standards for trucks at the Port and have trucks indicate compliance with standards by displaying an easily recognizable sticker; (4) provide compulsory training for truck drivers on the dangers of diesel emissions; (5) develop a systems of fines for trucks not complying with emission standards; (6) plant a tree buffer zone between Port and neighborhood; (7) install air monitors; (8) provide funding for creation and maintenance of a new West Oakland park; (9) provide free truck parking away from West Oakland communities; (10) phase-in non diesel alternatives; (11) provide "no truck parking" signs in West Oakland neighborhoods and develop an enforcement program for mitigations needing enforcement; and (12) provide additional shoreline access.
Ellen Parkinson	Verbal Comment on 6/13/96	<ul style="list-style-type: none"> Supports shoreline park as part of Vision 2000. Do not forget the youth in the community. Proposed a large fishing pier, a nine hole golf course, an Olympic-sized swimming pool, a bowling alley, and a skating rink. Emphasized need for housing and jobs. Concerned about air pollution and street congestion. Design a route from Port to interstate not through neighborhoods.
Roger Schmidt	Verbal Comment on 6/13/96	<ul style="list-style-type: none"> Supports Port and its contributions to improvements in the area. Requested improved access to the 7th Street Fishing Pier. Presented some of the suggestions developed during the waterfront charette, such as turning Middle Harbor into a small boat harbor; creating wetlands; extending the Bay Trail to this area; providing access to the area with a light rail system; using fill from dredging operations to expand canals to make breakwaters or create wetlands; and employing former navy staff in the recreational areas.
John Geddie	Letter Dated 6/13/96	<ul style="list-style-type: none"> Wishes to be included on the mailing list to receive the EIS/EIR.

Table D-1
Scoping Summary

Commentor	Form	Issues
Andrea Dawson, Acumen Building Enterprise	Letter Dated 6/11/96	<ul style="list-style-type: none">• Wishes to be included on the mailing list to receive the EIS/EIR.

[Federal Register: March 21, 1997 (Volume 62, Number 55)]
[Notices]
[Page 13602]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr21mr97-58]

DEPARTMENT OF DEFENSE

Department of the Navy

Notice of Public Hearing for the Joint Draft Environmental Impact Statement/Environment Impact Report (EIS/EIR) for the Disposal and Proposed Reuse of the Fleet and Industrial Supply Center, Oakland, CA

Summary: Pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and the California Environmental Quality Act (CEQA) Section 15170, the Department of the Navy, in coordination with the Port of Oakland, has prepared and filed with the U.S. Environmental Protection Agency a joint Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Navy disposal and Port of Oakland reuse of the Navy Fleet and Industrial Supply Center, Oakland (FISCO) property and structures in Oakland, California. The Navy will be the EIS lead agency for the NEPA documentation and the Port of Oakland will be the EIR lead agency for the CEQA documentation. The Federal Highway Administration is a cooperating agency for the EIS and the California Department of Transportation is a responsible agency for the EIR. FISCO is scheduled to close in September 1998 in compliance with the 1995 Base Realignment and Closure (BRAC) directive from Congress. The Draft EIS/EIR addresses the potential impacts to the environment that may result from the disposal of FISCO via special legislation (Public Law 104-106 Section 2867) to the Port of Oakland.

FISCO is within the planning jurisdiction of the Port of Oakland. The Port of Oakland Vision 2000 Program proposes development of ship, railroad, and truck freight handling facilities to meet the anticipated demand for transportation services in the San Francisco Bay area and northern California and an intermodal port of national and international commerce. The Vision 2000 Program also includes development of public waterfront access and marine habitat enhancement.

The joint EIS/EIR provides a program level analysis supporting both the Navy NEPA requirements to describe potential environmental impacts associated with the property disposal at FISCO, and the Port of Oakland CEQA requirements to analyze environmental impacts of implementing the Vision 2000 Program.

The Draft EIS/EIR evaluates a "No Action" alternative and four Port of Oakland reuse alternatives. The "No Action" alternative would result in the federal government indefinitely retaining ownership of the nonreversionary Navy property. Under the "No Action" alternative, the Navy would continue leasing the property to the Port of Oakland under the existing 50 year lease agreement allowed by Public Law 102-484.

The four reuse alternatives combine the common land use components of a railroad terminal, marine terminals, public waterfront access and marine habitat enhancement. As FISCO is within the Port of Oakland jurisdiction and is designated as a Port Priority use area in the April 1996 San Francisco Bay Conservation and Development Commission and the Metropolitan Transportation Commission Seaport Plan Update, these four alternatives emphasize port-related activities. The Port of Oakland Vision 2000 Program may require additional property outside the FISCO boundary in order to meet the objectives of the Program.

ADDRESSES: The Draft EIS/EIR is available for review at the following public libraries in the vicinity of FISCO: (1) West Oakland Public Library, 1801 Adeline Street, Oakland, CA; (2) Oakland Main Library, 125 14th Street,

Oakland, CA; and (3) Alameda Main Library, 2264 Santa Clara Avenue, Alameda, CA. The Navy will conduct a public hearing on Tuesday, April 8, 1997, at 7:00 p.m., in the West Oakland Library, 1801 Adeline Street, Oakland, California. Federal, state and local agencies, and interested individuals are invited to be present or represented at the hearing. Oral comments will be heard and transcribed by a stenographer. To assure accuracy of the record, all comments should be submitted in writing. All comments, both oral and written, will become part of the public record in the study. In the interest of available time, each speaker will be asked to limit oral comments to five minutes. Longer comments should be summarized at the public hearing and submitted in writing either at the hearing or mailed to the address listed below.

FOR FURTHER INFORMATION CONTACT: All written comments concerning the Draft EIS/EIR must be submitted no later than April 22, 1997 to Mr. Gary J. Munekawa (Code 1852GM), Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-5006, telephone (415) 244-3022, fax (415) 244-3737. For information regarding the Port of Oakland Vision 2000 Program or the Draft EIR, please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Section, 530 Water Street, Oakland, California 94607, telephone (510) 272-1181, or fax (510) 465-3755. A limited number of additional Draft EIS/EIR documents are available on request.

Dated: March 18, 1997.

D.E. Koenig,

LCDR, JAGC, USN, Federal Register Liaison Officer.

[FR Doc. 97-7238 Filed 3-20-97; 8:45 am]

BILLING CODE 3810-FF-P

[Federal Register: March 7, 1997 (Volume 62, Number 45)]
[Notices]
[Page 10558-10559]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr07mr97-90]

ENVIRONMENTAL PROTECTION AGENCY [ER-FRL-5478-1]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564-7167 OR (202) 564-7153.
Weekly receipt of Environmental Impact Statements Filed February 24, 1997 Through February 28, 1997 Pursuant to 40 CFR 1506.9.

EIS No. 970065, Draft EIS, BLM, CA, Interlakes Special Recreation Management Area Plan, Implementation, Federal and Private Lands Issues, Shasta County, CA, Due: April 21, 1997, Contact: Eric A. Morgan (916) 224-2100.

EIS No. 970066, Draft EIS, FHW, GA, Harry S. Truman Parkway, Construction from the Abercorn Street Extension (GA-204) to Derenne Avenue, COE Section 404 Permit and U.S. Coast Guard Permit, Chatham County, GA, Due: April 21, 1997, Contact: Larry R. Dreihaupt (404) 562-3630.

EIS No. 970067, Draft Supplement, BLM, MT, SD, ND, Standards for Rangeland Health and Guidelines for Livestock Grazing Management on Bureau of Land Management Administered Lands, Implementation, MT, ND and SD, Due: May 03, 1997, Contact: Sandy Brooks (406) 255-2929.

EIS No. 970068, Draft EIS, GSA, CO, Denver Federal Center Master Site Plan, Implementation, City of Lakewood, Jefferson County, CO, Due: April 28, 1997, Contact: Lisa Morpurgo (303) 236-7131.

EIS No. 970069, Final EIS, BLM, NV, Denton-Rawhide Mine Expansion Project, Plan of Operation Approval, Implementation, Mineral County, NV, Due: April 07, 1997, Contact: Terri Knutson (702) 885-6156.

EIS No. 970070, Draft EIS, AFS, NH, Waterville Valley Ski Resort Project, Development of Snowmaking Water Impoundments Project, Special-Use-Permits, Dredge and Fill Permit and COE Section 404 Permit, White Mountain National Forest, Pemigewasset Ranger District, Town of Waterville Valley, Grafton County, NH, Due: April 21, 1997, Contact: Jerome E. Perez (802) 767-4261.

EIS No. 970071, Draft EIS, USA, CA, Fleet and Industrial Supply Center/Vision 2000 Maritime Development, Disposal and Reuse, Funding, NPDES Permit, COE Section 10 and 404 Permits, City of Oakland, Alameda County, CA, Due: April 21, 1997, Contact: Gary J. Munekawa (415) 244-3022.

EIS No. 970072, Final EIS, BLM, NM, Roswell Resource Area Management Plan and Carlsbad Resource Area Management Plan Amendment, Implementation, Quay, Curry, DeBaca, Roosevelt, Lincoln, Guadalupe, Chaves, Eddy, and Lea Counties, NM, Due: April 07, 1997, Contact: David Stout (505) 627-0272.

EIS No. 970073, Draft EIS, AFS, AK, Chasina Timber Sale, Harvesting Timber and Road Construction, Tongass National Forest, Craig Ranger District, Ketchikan Administrative Area, AK, Due: April 25, 1997, Contact: Norm Matson (907) 228-6273.

EIS No. 970074, Final EIS, DOE, NV, CA, Sierra Nevada Region 2004 Power Marketing Program, Implementation, 1,480 megawatts (MW) Power from the Central Valley and Washoe Project, NV and CA, Due: April 07, 1997, Contact: Jerry Toenyas (916) 353-4418.

Dated: March 4, 1997.

William D. Dickerson,

Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 97-5703 Filed 3-6-97; 8:45 am]

BILLING CODE 6560-50-U



PETE WILSON
GOVERNOR

State of California

GOVERNOR'S OFFICE OF PLANNING AND RESEARCH ENVIRONMENTAL DEPT.

1400 TENTH STREET
SACRAMENTO 95814



37 APR 24 10:14

LEE GRISSOM
DIRECTOR

April 22, 1997

RECEIVED

JAMES MCGRATH
PORT OF OAKLAND
530 WATER STREET
OAKLAND, CA 94607

Subject: DISPOSAL AND REUSE OF FLEET INDUSTRIAL AND SUPPLY SCH #:
96062010

Dear JAMES MCGRATH:

The State Clearinghouse submitted the above named environmental document to selected state agencies for review. The review period is closed and none of the state agencies have comments. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call Kristen Derscheid at (916) 445-0613 if you have any questions regarding the environmental review process. When contacting the Clearinghouse in this matter, please use the eight-digit State Clearinghouse number so that we may respond promptly.

Sincerely,

ANTERO A. RIVASPLATA
Chief, State Clearinghouse

GUIDE TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Notice of Completion and Environmental

Document Transmittal Form

Mail to: State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814-0613

Draft Envir. Impact Statement/Envir. Impact Report for the

1. Project Title: Disposal & Reuse of the Fleet & Industrial Supply, Oakland

2. Lead Agency: Port of Oakland

3a. State Address: 530 Water Street

3b. County: Alameda

3c. Zip: 94607

3. Contact Person: JAMES E. MEYER

3d. City: Oakland

3e. Phone: 415-372-1181

Project Location - Specific: adjacent to Oakland Inner and Middle Harbor, off 7th Street, Oakland, CA

4. County: Alameda

4a. City/Community: Oakland, East Oakland

4b. Assessor's Parcel No.: 4/A

4c. Section: 1

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PUBLIC HEARING NEWSPAPER ADVERTISEMENTS

The following newspaper advertisement announcing the public hearing to receive oral and written comments concerning the Disposal and Reuse of FISCO/Vision 2000 Maritime Development Draft EIS/EIR and the start of the public comment period was published in the following papers:

San Francisco Chronicle - Sunday, March 30, 1997, and Monday March 31, 1997.

Oakland Tribune - Sunday, March 30, 1997, and Monday March 31, 1997.

Oakland Post - Sunday, March 30, 1997.

NOTICE OF PUBLIC HEARING
Joint Draft Environmental Impact Statement/Environmental Impact
Report (EIS/EIR) for the Disposal and Proposed Reuse of the Fleet and
Industrial Supply Center, Oakland, CA

7:00 P.M.
TUESDAY, APRIL 8, 1997
WEST OAKLAND PUBLIC LIBRARY
OAKLAND, CALIFORNIA

A public hearing to receive oral and written comments concerning the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) will be held on Tuesday, April 8, 1997, at 7:00 p.m., in the West Oakland Library, 1801 Adeline Street, Oakland, California. Federal, state and local agencies, and interested individuals are invited to be present or represented at the hearing. Oral comments will be heard and transcribed by a stenographer. To assure accuracy of the record, all comments should be submitted in writing. All comments, both oral and written, will become part of the public record in the study. In the interest of available time, each speaker will be asked to limit oral comments to five minutes. Longer comments should be summarized at the public hearing and submitted in writing either at the hearing or mailed to the address listed below.

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The Draft EIS/EIR is available for review at the following public libraries in the vicinity of FISCO:

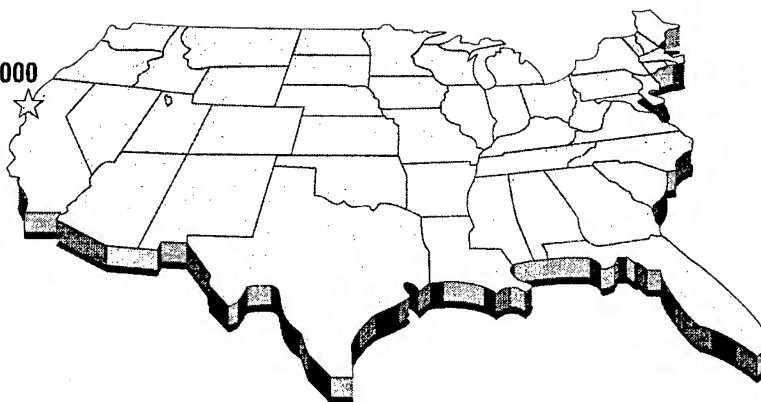
West Oakland Public Library, 1801 Adeline Street, Oakland, CA;
 Oakland Main Library, 125 14th Street, Oakland, CA; and
 Alameda Main Library, 2264 Santa Clara Avenue, Alameda, CA.

All written comments concerning the Draft EIS/EIR must be submitted no later than April 22, 1997 to:

Mr. Gary J. Munkawa (Code 1852GM)
 Engineering Field Activity West
 Naval Facilities Engineering Command
 900 Commodore Drive, San Bruno, California 94066-5006
 Telephone (415) 244-3022, Fax (415) 244-3737

For information regarding the Port of Oakland Vision 2000 Program or the Draft EIR, please contact Ms. Loretta Meyer, Port of Oakland, Environmental Assessment Section, 530 Water Street, Oakland, California 94607, telephone (510) 272-1181, or fax (510) 465-3755. A limited number of additional Draft EIS/EIR documents are available on request.

FISCO/Vision 2000



APPENDIX E REGULATORY CONSIDERATIONS

LAND USE	E-1
CULTURAL RESOURCES	E-5
VISUAL RESOURCES	E-6
BIOLOGICAL RESOURCES	E-7
WATER RESOURCES	E-9
GEOLOGY AND SOILS	E-11
TRAFFIC AND CIRCULATION	E-14
AIR QUALITY	E-15
NOISE	E-17
UTILITIES	E-19
HAZARDOUS MATERIALS AND WASTE	E-20

Appendix E

Regulatory Considerations

E.1. LAND USE

This section identifies land use plans and regulations that affect land use of the site. This includes the Port of Oakland Business and Policy Plan, the City of Oakland Policy Plan, the BCDC and MTC San Francisco Bay Area Seaport Plan, the Airport Land Use Commission (ALUC) of Alameda County Regulations, and the Coastal Zone Management Act (CZMA) regulations.

E.1.1 Port of Oakland Jurisdiction

Under the Charter of the City of Oakland, the Board of Port Commissioners is vested with the complete and exclusive power and duty, for and on behalf of the City of Oakland within the Port area, to exercise regulatory jurisdiction over land uses and other activities related to the Port of Oakland and to take charge and control of all rights and interests of the City in land and water areas (such as FISCO property). FISCO is within the Port area. Under the City Charter, the Board consists of seven Oakland residents appointed for four-year staggered terms by the Oakland City Council upon nomination by the City Mayor. Under the City Charter, the Board's power is subject to the requirement that it develop and use land in the Port area for a purpose in conformity with the City's General Plan. Most of the Port area is subject to the use restrictions of state legislative trust grants to the City of Oakland, which require uses consistent with statewide commerce, navigation and fisheries (Clark, T., August 14, 1996, personal communication).

Most of the Port area consists of land and water areas owned by the City of Oakland and administered by the Board. Most of the City-owned land in the Port Area is leased by the Board to others, with conditions and requirements governed by the relevant lease. With some exceptions, for City-owned land in the Port area, the Board approves only uses related to aviation, maritime, or other commercial uses of statewide import. If the land is owned by third parties, then the Board only approves uses that do not interfere or are not inconsistent with other aviation,

maritime, or commercial uses of City-owned property in Port Area (Clark, T., August 14, 1996, personal communication).

In 1968, a master development plan, commonly referred to as the Shoreline Plan, was adopted by the Port Commissioners by resolution on November 4, 1968, and was amended in 1969 to incorporate the plan and policies into the City of Oakland Comprehensive Plan (Clark, T., August 14, 1996, personal communication). In general, the Port land uses are consistent with the policies of the City of Oakland.

E.1.2 City of Oakland Policy Plan

The City of Oakland Comprehensive Plan serves as the city's general plan. The city is in the process of updating the Comprehensive Plan. Comprehensive Plan policies help set the direction for land use designations, zoning districts, and development standards. The project site is designated for industrial use (Brady and Associates 1994).

The Oakland Policy Plan, a major component of the city's Comprehensive Plan, is the city council's statement of basic goals and policies, and guides its decisions on specific projects and actions. It also guides the actions and programs of city departments and agencies and assists citizens in participating in the policy-making process. Because the Port proposals for reuse of the project site should be consistent with the Oakland policy plan, the following policies should be considered (City of Oakland 1980):

E.1.2.1 General Considerations

Policy on Land Use Decision-making. The applicable policies state "In deciding on major land use issues, the City will seek to consider the full range of direct and indirect economic, social, physical, environmental, and public service factors involved, giving special attention to possible impacts on lower income persons, the elderly, or members of minority groups." And "In considering those land use questions which mostly affect a particular neighborhood or other area, the City will give substantial weight to the opinions of the local citizens."

Policy on Land Use Relating to the Natural Setting. The applicable policies state "Bay fill should be undertaken only upon clear and convincing evidence that its benefits will outweigh its resulting environmental and other costs." And "In the development of shoreline areas, every reasonable effort should be made to provide attractive public access to the water-edge."

Policy on Land Use Relating to Noise. The applicable policy states "To the extent compatible with noise levels and other environmental factors, the intensity of development at each point in the city should be related to the degree of accessibility there."

Policy on Land Use Relating to Urban Design and Preservation. The applicable policy states "Every effort should be made to preserve those older buildings, other

physical features, sites, and areas which have significant historical, architectural, or other special interest or value.”

Policies on Land Use Regulations, Mixture, and Transition. The applicable policies state “The City will employ zoning or other land use regulations to ensure that land uses are compatible with their surroundings and to promote appropriate design and on-site conditions for residents or other users.” And “The City will see that the applicable land use regulations are compatible with particular desired functions and character, and where appropriate provide for an orderly transition of use type or density over time.” And “In areas which now contain a significant mixture of housing and industries, special steps should be taken to mitigate conflicts between these uses.”

E.1.2.2 Commercial and Industrial Uses

General Policies. The applicable policies state “The environmental quality of Oakland’s commercial and industrial areas should be protected and in many cases greatly improved. Amenities such as street trees and plazas should be added where appropriate to make these areas more desirable shopping or working environments.” And “Commercial and industrial areas should have adequate parking and loading facilities.”

Policies on Industrial Areas. The applicable policies state “When appropriate, rehabilitation in the form of structural repairs, modernization, improvement, or conversion of buildings, or other facilities, will be financially aided by the City to improve the environmental quality, efficiency, and market potential of industrial areas.” And “If the sites of existing military, transportation, or utility uses within the industrial belt become available for reuse in the future, they should generally be used for transportation or, in suitable locations, manufacturing or wholesaling. Special consideration should be given to possible uses that would involve large numbers of jobs or big contributions to the City’s tax base.” and “Marine and air terminal capacity should be developed with city, regional, and state-wide benefits.” and “Industrial areas should be developed and used in such a manner that they do not harm adjacent residential areas.”

E.1.2.3 Civic and Open Space Uses

Policies on Civic and Open Space Uses. The applicable policies state “Efforts should be made to increase the total acreage of public parks and recreation areas within the city limits, exclusive of facilities at schools, colleges, and universities, to at least 10 acres for each 1,000 of Oakland’s population.”

E.1.3 BCD/C/MTC San Francisco Bay Area Seaport Plan

The San Francisco Bay Area Seaport Plan is the product of a cooperative planning effort of the Bay Conservation and Development Commission (BCDC) and the Metropolitan Transportation Commission (MTC). The Seaport Plan constitutes the maritime element of MTC’s Regional Transportation Plan and BCDC’s San Francisco Bay Plan. The Seaport Plan employs land use designations and

enforceable policies that MTC and BCDC use in their funding and regulatory decisions and that local governments use in their land use and regulatory decisions. Areas determined to be necessary for future port development are designated as port priority use areas and are reserved for port-related and other uses that will not impede development of the sites for port purposes. Port priority use areas include marine terminals and directly-related ancillary activities such as container freight stations, transit sheds and other temporary storage, ship repairing, support transportation uses, including trucking and railroad yards, freight forwarders, government offices related to the port activity, chandlers, employee parking, and marine services. Within port use areas, marine terminals are identified, and these sites are reserved specifically for cargo handling operations (BCDC 1996).

The Seaport Plan is being revised to include the FISCO site. MTC has prepared an update that suggests designating the FISCO site as a port priority use area, declaring, "If and when not needed by the Navy, should be developed for port and related industrial uses." The proximity of FISCO to Port of Oakland and railyard facilities makes its shoreline a prime candidate for development as a major seaport facility. The emphasis should be on developing sites in the Oakland Inner Harbor. The update evaluated the FISCO site based on the criteria listed in Table E-1 (MTC 1996).

Table E-1
FISCO Seaport Use Evaluation

Rating	Criteria
Excellent	Compatibility with surrounding land uses
Excellent	Land access to freeways and railyards
Fair	Environmental conditions, especially bay fill requirements
Excellent	Availability of a local sponsor to plan, finance, and manage port
Excellent	Good infrastructure, such as warehouses, truck terminals, and railyards
Excellent	Available land for berth development and freight storage and movement
Excellent	Access by a significant portion of modern fully-loaded container vessels

Source: MTC 1996

E.1.4 Airport Land Use Commission of Alameda County Regulations

The proposed project site is outside the ALUC General Referral Area and safety zones (where no structures are permitted in parts of aircraft flight paths) for NAS Alameda. The proposed project location is also outside the NAS Alameda Air Installation Compatible Use Zone (AICUZ) safety zone. However, part of the property is within the AICUZ Accident Potential Zone 2. In this zone, port facilities, rail lines, and trucking would be permitted so long as the height of occupied structures does not exceed four stories and electronic equipment does not

interfere with flight operations. The maritime and transportation uses of the subject site conform with the ALUC Noise Impact Zone for NAS Alameda.

E.1.5 Coastal Zone Management Act Regulations

The federal Coastal Zone Management Act requires that federal actions be consistent to the maximum extent practicable with federally approved state coastal plans. The San Francisco Bay Plan and Bay Area Seaport Plan are the local coastal plans for the San Francisco Bay. The Navy will comply with any applicable requirements of the Coastal Zone Management Act prior to conveyance of FISCO property.

E.2. CULTURAL RESOURCES

The following is a brief summary of relevant plans, policies, and regulations governing cultural resources.

E.2.1 Federal Laws

Pursuant to the regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Navy is the lead federal agency for the disposal of FISCO. Section 106 of NHPA (16 USC 470f), as amended, and its implementing regulations (36 CFR 800), require federal agencies to consider the effects of their actions on properties listed, or eligible for listing, in the National Register of Historic Places (NRHP). It also requires that agencies provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on actions that will directly or indirectly affect National Register or eligible properties. Generally, a project that will have a "substantial adverse change" on a NRHP-eligible property is regarded as having a significant adverse effect on the environment. The criteria for evaluating NRHP eligibility, the relative significance, of cultural resources are found in 36 CFR 60.4.

Additional responsibilities also are placed on the activity commander or commanding officer pursuant to cultural resources requirements of DOD and the Department of the Navy (DOD Directive 4710.1 of 21 June 1984, Archeological and Historic Resources Management; Department of the Navy OPNAVINST 5090.1B, Historic and Archeological Resources Protection, 1 November 1994, Chapter 23).

E.2.2 State Laws

The principal state law relating to the preservation of historical and archeological properties is that of Appendices G and K of CEQA. CEQA mandates that significant effects to important cultural resources be determined during the project planning stage. Under this law, cultural resources include both prehistoric or historical archeological sites, as well as paleontological resources or properties of historic, cultural, or architectural significance to a community or ethnic or social group.

In addition to CEQA, the California Register Act of 1992, codified in Section 5020 and Section 21083 and 21084 of the Public Resources Code, offers specific guidance for the protection of archeological resources. The California Register of Historical Resources is a listing of significant historical resources in the state, similar to the NRHP at the national level. NRHP-listed or eligible properties are automatically listed in the California Register; therefore, the Navy Supply Center, Oakland Historic District, the Oakland Army Base Historic District, and the Southern Pacific West Oakland Shops Historic District are automatically included within the California Register. PRC 21084 of CEQA provides instructions on the treatment of projects that may result in a "substantial adverse change" to historical properties. Generally, a project that will have a "substantial adverse change" on a California Register property is regarded as having the potential for a significant effect on the environment.

E.3. VISUAL RESOURCES

The following is a brief summary of relevant plans, policies, and regulations governing visual and scenic resources.

E.3.1 City of Oakland Comprehensive Plan

The City of Oakland Comprehensive Plan contains policies in the Land Use Element and Scenic Corridor Element related to visual resources. The policies relevant to the proposed project are as follows:

E.3.1.1 Land Use Element

Policies on Urban Design and Preservation. Policy 1: The city will pursue a continuing comprehensive process of urban design to seize opportunities as they occur and direct physical changes toward a more efficient, more livable, more beautiful, and more dramatic urban environment.

Policy 2: The city will see that all public facilities ... form in the aggregate a logical visible framework that organizes and stimulates private development.

Policy 4: Every effort should be made to preserve those older buildings, other physical features, sites, and areas that have significant historical, architectural, or other special interest or value.

Policies Relating to the Natural Setting. Policy 1: Urban development wherever it occurs should be related sensitively to the natural setting, with the scale and intensity of development in each case bearing a reasonable relationship to the physical characteristics of the site.

E.3.1.2 Open Space, Conservation, and Recreation Element

The Draft Open Space, Conservation and Recreation element of the Oakland General Plan contains policies related to aesthetics and visual resources. Policy OS-2.5, Urban Park Acquisition Criteria, is to increase the amount of urban parkland, placing a priority on land with visual significance. Policy OS-3.2, Military Base

Open Space, calls for designating undeveloped areas with high natural resource or scenic value as Resource Conservation Areas.

E.3.2 BCDC San Francisco Bay Plan

The BCDC Bay Plan contains policies regarding appearance, design, and scenic views, as follows:

Policy 1: To enhance the visual quality of development around the bay and to take maximum advantage of the attractive setting it provides, the shores of the bay should be developed in accordance with the Public Access Design Guidelines and the General Development Guide.

Policy 3: In some areas, a small amount of fill may be allowed if the fill is necessary— and is the minimum absolutely required— to develop the project in accordance with the commission's design recommendations.

Policy 5: To enhance the maritime atmosphere of the Bay Area, ports should be designed, whenever feasible, to permit public access and viewing of port activities by means of (a) view points (e.g., piers, platforms, or towers) and restaurants that would not interfere with port operations and (b) openings between buildings and other site designs that permit views from nearby roads.

Policy 14: Views of the bay from vista points, from roads, and from other areas should be maintained by appropriate arrangements and heights of all developments and landscaping between the view areas and the water.

Policy 15: Vista points should be provided in the general locations indicated in the plan maps. Access to vista points should be provided by walkways, trails, or other appropriate means and would connect to the nearest public thoroughfare where parking or public transportation is available. In some cases, exhibits, museums, or markers would be desirable at vista points to explain the value or importance of the areas being viewed.

The San Francisco Bay Plan Map for the project site shows a West Basin of the Jack London Square Marina adjacent to the Howard Terminal, and states that at Jack London Square continuous public access should be provided along the Estuary to the Lake Merritt Channel.

E.4. BIOLOGICAL RESOURCES

The following is a brief summary of relevant plans, policies, and regulations governing biological resources.

E.4.1 Rivers and Harbors Act of 1899 (Section 10)

The US Army Corps of Engineers regulates impacts to navigable waters, making the excavation from or deposition of material into those waters subject to regulation. The Rivers and Harbors Act of 1899 (Section 10) includes the building

of structures in, over, or under these waters. A permit must be obtained from the Corps by the Port of Oakland before activities, such as filling, dredging, or construction, could begin in the waters around the project site.

E.4.2 Clean Water Act

The Clean Water Act was enacted to restore and protect the chemical, physical and biological integrity of the Nation's waters. Clean Water Act Section 401 certification requires that permitted projects comply with state water quality standards. The State establishes water quality standards under Section 301 of the Clean Water Act. State certification is a condition of the 401 certification process. State certification is covered under the Porter-Cologne Act.

Clean Water Act Section 404(B)(1) establishes guidelines for the discharge of dredged or fill material. The guidelines are established individually, or in concert with other activity to prevent adverse impacts to the ecosystem. The US Army Corps of Engineers must provide an opportunity for public comment. The guidelines and policies are developed in conjunction with the Environmental Protection Agency (EPA).

E.4.3 Porter-Cologne Water Quality Control Act

The law established a comprehensive program for regulating state water quality and controlling pollution. The organizations responsible for implementing this law include the State Water Resources Control Board and the regional water quality control boards.

E.4.4 Federal Endangered Species Act

Federal law directs that all federal agencies and departments use their authority to preserve endangered and threatened species under the guidance of the Endangered Species Act (16 USC 1531 et seq.). Federal agencies are required to consult with the US Fish and Wildlife Service (USFWS), or US National Marine Fisheries Service (NMFS) for marine species, prior to undertaking actions that may affect endangered species. The biological opinion is normally issued after the USFWS reviews the draft environmental document. Federal agencies are prohibited from enacting activities that would jeopardize the continued existence of these species.

E.4.5 Fish and Wildlife Coordination Act of 1934 (amended in 1958)

The act provides that wildlife conservation receive equal consideration and be coordinated with other features of water resources development. Any federal agency permitting, licensing, or construction of a project involving impoundment, diversion, or deepening of the waters of any stream or other water body must first consult with the Department of Interior (USFWS) and the Department of Commerce (NMFS), as well as the state wildlife resource agency to prevent losses or damages to resources and develop and improve resources in connection with development projects. Recommendations of the Secretary of the Interior must include impacts of the project on wildlife, measures to mitigate or compensate for these impacts, and a description of project features recommended for wildlife

conservation and development. The 1958 amendments to the law authorized the Secretary of the Interior to provide public fishing areas and accept donations of land and funds.

E.4.6 Coastal Zone Management Act: (1972, amended in 1990)

The Coastal Zone Management Act (CZMA) of 1972 and subsequent 1990 amendments (16 U.S.C. 1456 et seq.) act provides for coastal management programs by States. BCDC's coastal management program for the San Francisco Bay was approved in 1977 and is based on the McAteer-Petris Act, the Suisun Marsh Preservation Act of 1977, and the Bay Plan.. Federal agencies make consistency determinations regarding proposed federal activities including permits and licenses. BCDC can concur or object to a permit based on its policies and laws.

E.4.7 California Endangered Species Act

California provides procedures similar to the federal Endangered Species Act for nonfederal projects under the California Endangered Species Act, California Fish and Game Code (Section 2090 et seq.). For example, the California Department of Fish and Game (CDFG) can adopt a federal biological opinion as a state biological opinion under California Fish and Game Code (Section 2095). Upon disposal of FISCO out of federal ownership, it would be subject to these state regulations.

E.5. WATER RESOURCES

Regulations relevant to water resources include the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region's Water Quality Control Plan for the San Francisco Bay Region (RWQCB 1986), and National Pollutant Discharge Elimination System (NPDES) permit requirements for Stormwater Pollution Prevention Programs (SWPPPs) and point source discharges. The US Army Corps of Engineers regulates disposal of dredged materials, as well as placement of fill. The BCDC also regulates bay fill pursuant to the McAteer-Petris Act. In addition, the City of Oakland participates in National Flood Insurance Program (NFIP) of the Federal Emergency Management Agency (FEMA). Upon reuse, the project site would also need to be consistent with flood protection provisions of the Environmental Hazards Element of the City of Oakland's Comprehensive Plan (City of Oakland 1974).

E.5.1 Water Quality

Jurisdiction over water quality is established by the federal Clean Water Act and the state's Porter-Cologne Water Quality Control Act. The US EPA has delegated primary responsibility for water quality control to the California State Water Resources Control Board (SWRCB). This authority is implemented in the Bay Area by the San Francisco RWQCB. The SWRCB and RWQCB jurisdiction covers implementation of the NPDES permitting requirements for discharges from point (e.g., industrial outfall discharges) and nonpoint (e.g., stormwater runoff) sources of water pollutants. Pursuant to Section 319 of the Clean Water Act, the state has the lead role in identifying and controlling nonpoint sources of

pollution. The RWQCB implements the NPDES program through the issuance of permits for construction and industrial discharges.

The RWQCB also regulates water quality in accordance with state laws and policies identified in the San Francisco Basin Plan. This plan identifies beneficial uses of surface and ground waters, wetlands, and marshes and sets forth water quality objectives to protect the beneficial uses. Beneficial uses for central San Francisco Bay include industrial uses, processing, navigation, contact and noncontact recreation, fishing, commercial uses, wildlife habitat, species preservation, and fisheries habitat (RWQCB 1986, as amended). NPDES permit effluent discharge limitations are structured to achieve regional compliance with Basin Plan beneficial uses.

Urban runoff discharges are regulated under NPDES Permit Regulations for Stormwater Discharges, which are enforced by the RWQCB. Stormwater discharges relevant to the Port of Oakland are regulated in two categories, construction discharges and industrial discharges. The California SWRCB has issued a Statewide General Permit for Industrial Stormwater Discharges that covers non-point discharges from specific industries that apply and qualify for inclusion under the State General Permit. The General Permit does not include all discharges except for construction discharges. To be covered under the State's General Permit, dischargers must submit a Notice of Intent (NOI) to the Board.

At the Port, tenants with activities regulated under the General Permit submit individual NOIs to the SWRCB. The Port itself has not submitted a NOI for its marine terminals operations because the Port does not operate any activities regulated by the General Permit in the marine terminal area. In order to assist its tenants and others in complying with stormwater permit regulations, the Port has organized a working group to prepare a stormwater monitoring program. The Port also provides assistance to its tenants in the preparation of the required SWPPP as well as the application of best management practices (BMPs). Although the Port is developing the SWPPPs and BMPs for the marine terminals, the tenants are responsible for submitting NOIs to the SWRCB. No NOIs have been submitted for uses on the Port's recently leased portion of FISCO; however, NOIs for regulated uses on that property may be submitted in the near future (Herman, D., May 13, 1996, personal communication).

Construction activities at the project site that would result in the cumulative disturbance of over five acres of soil would be subject to measures required by the General Permit for Stormwater Discharges Associated with Construction Activities. Industrial wastewater discharges from point sources would be subject to RWQCB Waste Discharge Requirement permits.

FISCO currently complies with the Statewide General Permit for Industrial Stormwater Discharges through an NOI that covers the entire base as a single industrial site. The permit includes a SWPPP that includes existing and proposed

BMPs. The Navy has prepared a stormwater sampling and analysis program for review by the RWQCB and has been preparing its annual reports since 1992. As part of that program, water is tested twice annually between October and April; periodic inspections also are conducted (Wong, P., May 22, 1996, personal communication).

E.5.2 Fill and Dredging

The US Army Corps of Engineers has jurisdiction over certain structures or work in or affecting navigable waters of the US pursuant to section 10 of the Rivers and Harbors Act of 1899. The US Army Corps of Engineers also regulates discharge of dredge or fill materials pursuant to Section 404 of the Clean Water Act. The BCDC has regulatory authority over non-federal filling operations in the bay and inland within a 100-foot shoreline band from the line of high tide. The RWQCB regulates dredging and dredge material disposal as it relates to water quality. Future maintenance dredging also could be regulated under the Marine Protection, Research, and Sanctuaries Act to the extent that dredge materials are disposed of in the ocean.

US EPA, Region 9, US Army Corps of Engineers, San Francisco District, BCDC, RWQCB, and California SWRCB have been preparing a Long-term Management Strategy (LTMS) for the placement of dredged material in the San Francisco Bay Region. That study is intended to identify long-term solutions to the problem of regional dredge material disposal for a 50-year planning period. It is estimated that an average of 300 million cubic yards per year of dredge materials will require disposal through the planning period. The LTMS includes provisions for disposal, rehandling, and reuse of dredge material in both construction and fill activities. After the LTMS is adopted, the Port may elect to follow LTMS regional dredge disposal approaches or may identify its own dredge disposal site(s).

E.5.3 Flooding

Flood protection for nonfederal lands is administered by FEMA under the NFIP. Participating communities must implement specific flood plain management measures to reduce flood risks to new development. The necessary measures are developed on the basis of Flood Insurance Studies (FIS), which result in the preparation of Flood Insurance Rate Maps (FIRMs). Although FISCO is not under the NFIP, the City of Oakland is a participating community, and the site would be under the NFIP upon conveyance of jurisdiction to the Port. The most recent FIS and associated FIRMs prepared for the city did not include analysis of flood hazards within FISCO (FEMA 1982). The city's environmental hazard's element, flood hazard policies 1 and 3, provide relevant guidance regarding floodplain protection (City of Oakland 1974).

E.6. GEOLOGY AND SOILS

The following is a brief summary of relevant plans, policies, and regulations governing geology and soils.

E.6.1 State of California

The California Code of Regulations (CCR), Title 24, Part 2, also known as the California Building Code (CBC), contains the enforceable state building standards. These regulations are promulgated by the Division of the State Architect/Structural Safety Section, and the Office of Statewide Health Planning and Development. The California Building Standards Commission is responsible for coordinating all building standards in California. The City of Oakland Department of Public Works is responsible for enforcing these standards within the city.

The project site is located within seismic Zone 4, the highest seismic classification defined in the CBC. CBC seismic standards represent minimum requirements for new construction within Zone 4, a region in which the effective peak ground acceleration assumed in design calculations is 0.5g. In areas in which effective peak ground accelerations are likely to be greater than 0.5g, the minimum CBC requirements may not be adequate. The CBC defines two alternative methods for calculating design seismic forces— a static procedure and a dynamic procedure. The dynamic procedure allows for a site-specific determination of the structural design requirements, based on geologic, tectonic, seismologic, and soil characteristics associated with the site and is required for certain classes of structures.

The CBC (Section 1629A.2) requires that every structure have sufficient ductility and strength to undergo the displacement caused by the “upper bound earthquake” motion without collapse. The upper bound earthquake ground motion is defined as the motion having a 10 percent probability of being exceeded in a 100-year period or maximum level of motion that may ever be expected at the building site within the known geological framework.

Under the Alquist-Priolo Earthquake Fault Zoning Act, the California Division of Mines and Geology has delineated seismic zones that are deemed to be “sufficiently active and well-defined as to constitute a potential hazard to structures from surface faulting or fault creep.” The state geologist is also required to review continually new geologic and seismic data and to revise the earthquake fault zones or to delineate new zones based on new information. No active faults have been identified within the property boundaries of the project site. The nearest delineated active fault zone is the Hayward Fault, located approximately five miles east of the project site. The delineated San Andreas Fault is approximately 15 miles west of the site. The delineated Calaveras Fault is located approximately 15 miles to the east.

E.6.2 City of Oakland

The Health and Safety Element of the City of Oakland General Plan (1991) requires that a soils and geologic report be submitted to the Department of Public Works prior to issue of all building permits to evaluate the potential for lateral spreading, liquefaction, differential settlement, and other types of ground failures.

It requires all structures of three or more stories to be supported on pile foundations that penetrate Bay Mud deposits and to be anchored in firm noncompressible materials, unless geotechnical findings indicate a more appropriate design. It also provides for the identification and evaluation of existing structural hazards and abatement of those hazards to acceptable levels of risk.

E.6.3 Port of Oakland

The Port of Oakland has adopted wharf design criteria to be used in design, construction, reconstruction, or repair of all existing and future wharf structures, except in the event that current engineering practice requires adjustments or modification of the wharf design criteria (Port Wharf Design Guidelines Ordinance No. 2972). . The General Engineering Design Criteria include the following geotechnical standards:

- 1(d) A sufficiently deep cutoff wall or other means shall be provided along the back of the wharf to prevent erosion of yard materials by tidal, wave, or other action under the wharf.
- 1(e) The slope beneath the wharf shall be protected from erosion by placement of riprap or by other means, as recommended by a geotechnical consultant.
- 1(f) The dike or cut slope beneath the wharf shall be designed to withstand the same seismic forces as the wharf structure. It shall contain the soil behind the slope under the design earthquake loading.
- 1(g) Flexible connections shall be provided where utilities pass from the yard through the cutoff wall or other rigid structure at the back of the wharf.
- 2(c) The seismic loads shall be based on site response spectral curves developed by geotechnical consultants taking into account the effects of earthquakes on the two major faults in the vicinity of the wharf structure (San Andreas and Hayward) as well as other faults in the region.

E.6.4 Bay Conservation and Development Commission

The San Francisco Bay Plan (BCDC 1992) includes policies regarding the placement of fill for earthquake safety. Policy 1 states that the commission has appointed the Engineering Criteria Review Board, consisting of geologists, civil engineers specializing in soils engineering, structural engineers, and architects competent to and adequately empowered to (a) establish and revise safety criteria for bay fills and structures thereon; (b) review all except minor projects for the adequacy of their specific safety provisions and make recommendations concerning these provisions; (c) prescribe an inspection system to assure placement of fill according to approved designs; and (d) gather and make available performance data developed from specific projects. These activities would complement the functions of local building departments and local planning departments, none of which are presently staffed to provide soils inspections.

E.7. TRAFFIC AND CIRCULATION

The following is a brief summary of relevant plans, policies, and regulations governing traffic and circulation.

E.7.1 US Department of Transportation

The Federal Highway Administration is the agency of the Department of Transportation responsible for the federally-funded roadway system, including the interstate highway network and portions of the primary state highway network. Federal Highway Administration funding is provided through the Intermodal Surface Transportation Efficiency Act of 1991 for which this project (Vision 2000) qualifies. This act's legislation can be used to fund local transportation improvement projects, such as projects to improve the efficiency of existing roadways, traffic signal coordination, bikeways, and transit system upgrades.

E.7.2 California Department of Transportation

Caltrans is responsible for the planning, design, construction, and maintenance of all state highways. Caltrans jurisdictional interest would extend to improvements to roadways at the interchange ramps serving area freeways. Any federally funded transportation improvements would be subject to review by Caltrans staff and the California Transportation Commission.

E.7.3 Metropolitan Transportation Commission

The Metropolitan Transportation Commission is the regional organization responsible for prioritizing transportation projects in a Regional Transportation Improvement Program for federal and state funding. The process is based on evaluating each project for need, feasibility, and adherence to the Intermodal Surface Transportation Efficiency Act policies and congestion management program. The congestion management program requires that each jurisdiction identify existing and future transportation facilities that will operate below an acceptable service level and provide mitigation where future growth degrades that service level.

E.7.4 Alameda County Congestion Management Agency

The Alameda County Congestion Management Agency (CMA) is responsible for ensuring local government conformance with the congestion management plan, a seven-year program aimed at reducing traffic congestion. The CMA has review responsibility for proposed development projects that are expected to generate 100 more PM peak hour trips than otherwise would occur. The CMA reviews the adequacy of CEQA analyses and measures proposed to mitigate impacts. The CMA maintains a county-wide transportation model and has approval authority for the use of any local or subarea transportation models.

E.7.5 City of Oakland

The City has designated certain container truck routes that allow carriage of axle weights higher than typically allowed on other public streets without special

permits. Permitted container routes include 7th Street, Middle Harbor Road, Maritime Street and Third Street east of Middle Harbor Road.

The City of Oakland has placed a heavy truck (over 4.5 tons) restriction on I-580 between Grand Avenue and 106th Avenue. Truck traffic to and from the project site must use alternative roadways.

E.8. AIR QUALITY

The following is a brief summary of relevant plans, policies, and regulations governing air quality.

E.8.1 Federal Requirements

The federal Clean Air Act requires each state to develop, adopt, and implement a state implementation plan (SIP) to achieve, maintain, and enforce federal air quality standards throughout the state. These plans must be submitted to and approved by EPA. In California, the state implementation plan consists of separate elements for different regions of the state. SIP elements are generally developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated.

Local councils of governments and air pollution control districts have had the primary responsibility for developing and adopting the regional elements of the California SIP. In the San Francisco Bay region, SIP document preparation has been a coordinated effort involving three regional agencies: the Bay Area Air Quality Management District (BAAQMD), the Association of Bay Area Governments (ABAG), and the Metropolitan Transportation Commission (MTC).

The federal Clean Air Act imposes deadlines for achieving the federal ambient air quality standards. The San Francisco Bay Area was recently reclassified from a moderate nonattainment area to an attainment/maintenance area for the federal ozone standard. The urbanized portions of the San Francisco Bay Area are presently categorized as moderate nonattainment areas for the federal carbon monoxide standards. The Bay Area is currently not classified for the federal PM₁₀ standard.

The California Air Resources Board (CARB) believes that monitoring data demonstrate that the San Francisco Bay Area has achieved the federal carbon monoxide and PM₁₀ standards, and has requested that redesignation to attainment status for both pollutants. Final EPA action on the carbon monoxide and PM₁₀ redesignation requests is expected to occur within the next year.

E.8.2 State Requirements

The California Clean Air Act of 1988 requires air pollution control districts and air quality management districts to develop air quality management plans for meeting state ambient air quality standards for ozone, carbon monoxide, sulfur

dioxide and nitrogen dioxide. CARB is responsible for developing a plan for meeting state PM₁₀ standards.

The California Clean Air Act does not set specific deadlines for achieving state air quality standards. Instead, attainment is required "as expeditiously as practicable", with various emission control program requirements based on the attainment status for ozone and carbon monoxide standards. The entire San Francisco Bay Area is classified as a moderate nonattainment area for the state ozone standard. The Bay Area is also classified as a nonattainment area for the state PM₁₀ standard. The entire San Francisco Bay Area is currently classified as an attainment area for the state carbon monoxide standards.

Air pollution control programs were established in California prior to the enactment of federal requirements. Responsibility for air quality management programs in California is divided between CARB as the primary state air quality management agency and air pollution control districts as the primary local air quality management agencies. Federal Clean Air Act legislation in the 1970s resulted in a gradual merger of local and federal air quality programs, particularly industrial source air quality permit programs.

E.8.3 Air Quality Permits

Many types of industrial and commercial facilities require air quality permits for their equipment and operations. The BAAQMD has the primary air quality permit authority throughout the San Francisco Bay Area. Permit authority is derived from a combination of state and federal legislation, and can be categorized into construction or installation authorizations for individual pieces of equipment and permits for continued operation of equipment and facilities.

In general, federally required air quality permit programs have been integrated into the pre-existing state and local permit program. This results in a two-step permit process for new emission sources: an initial authority to construct (ATC) permit and a subsequent permit to operate (PTO).

E.8.4 Federal Clean Air Act Conformity Process

Section 176(c) of the Clean Air Act requires federal agencies to ensure that actions undertaken in nonattainment or maintenance areas are consistent with the Clean Air Act and with federally enforceable air quality management plans. EPA has promulgated separate rules that establish conformity analysis procedures for transportation-related actions and for other (general) federal agency actions. Transportation conformity requirements apply to actions funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA). General conformity requirements are potentially applicable to most other federal agency actions, but apply only to those aspects of an action that involve on-going federal agency responsibility and control over direct or indirect sources of air pollutant emissions. The conformity review process is intended to ensure that federal agency actions:

- Will not cause or contribute to new violations of any federal ambient air quality standards.
- Will not increase the frequency or severity of any existing violations of federal ambient air quality standards, and
- Will not delay the timely attainment of federal ambient air quality standards.

The transportation conformity rule applies primarily to highway construction projects and mass transit system projects. Harbor and railroad development projects generally are not subject to transportation conformity requirements (Tannehill, September 25, 1996, personal communication).

The EPA general conformity rule applies to most federal actions occurring in nonattainment or maintenance areas (such as the San Francisco Bay area) when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The federal nonattainment and maintenance pollutants subject to conformity analyses in the San Francisco Bay area include ozone precursors (reactive organic compounds and nitrogen oxides) and carbon monoxide. Applicable threshold levels for federal actions in the San Francisco Bay Area are 100 tons per year of reactive organic compounds, 100 tons per year of nitrogen oxides, and 100 tons per year of carbon monoxide.

Several categories of federal agency actions are exempted from the EPA general conformity rule because they are presumed to have federally controllable emissions below the threshold level. Transfers of ownership, interests, and titles in land, facilities, real property, or personal property to other public agencies or to private parties are among the actions exempted from conformity determination requirements. Lease arrangements, however, may be subject to the requirements of the conformity rule if the terms of the lease allow federal agencies to control the leasee's emission-generating activities.

E.9. NOISE

Various federal, state, and local agencies have developed guidelines for evaluating land use compatibility under different noise level ranges.

E.9.1 Federal Agency Guidelines

The federal Noise Control Act of 1972 (P. L. 92-574) established a requirement that all federal agencies must comply with applicable federal, state, interstate, and local noise control regulations. Federal agencies also were directed to administer their programs in a manner that promotes an environment free from noise that jeopardizes public health or welfare.

The Department of Defense evaluates the acceptability of noise levels at military installations according to three noise level zones—community noise equivalent

(CNEL) levels below 65 dB (Zone 1), CNEL levels of 65-75 dB (Zone 2), and CNEL levels above 75 dB (Zone 3). All land uses are considered compatible with Zone 1 noise levels. Industrial, office, and commercial uses are generally compatible with Zone 2 noise levels. Educational and residential land uses are not compatible with Zone 2 noise levels unless special acoustic treatments and designs are used to ensure acceptable interior noise levels. Residential and educational land uses are not compatible with Zone 3 noise levels. Industrial and manufacturing land uses may be acceptable in Zone 3 areas if special building designs and other measures are implemented.

A 1985 Air Installation Compatible Use Zone study update for NAS Alameda, located across the Oakland Inner Harbor from FISCO, identified areas of the FISCO, Port of Oakland, and Southern Pacific railyard properties as falling within Zone 2 (US Navy 1985). A small area in the southwest portion of the FISCO site fell within Zone 3 (US Navy 1985). Portions of Treasure Island, Yerba Buena Island, and the City of Oakland also fell within these boundaries. These zones were derived using 1983 NAS Alameda aircraft operations data. Since aircraft types and the number of operations have changed since that time, these zones may no longer be accurate. All military aircraft ceased operations at NAS Alameda in mid-1996; however, this base is still used periodically by commercial air craft.

E.9.2 State Agency Guidelines

The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single-family structures. These standards require that hotels, motels, and multiple-unit dwellings be constructed so that outdoor noise sources will not cause interior noise levels to exceed an annual average CNEL value of 45 decibels with the windows closed.

The California Department of Health Services (1987) has published guidelines for the noise element of local general plans. These guidelines include a noise level/land use compatibility chart that categorizes various outdoor CNEL ranges into as many as four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable), depending on land use.

The state noise element guidelines chart identifies normally acceptable noise levels for low density residential uses as CNEL values below 60 decibels. The normally acceptable range for high density residential uses is identified as CNEL values below 65 decibels. For educational and medical facilities, CNEL values of 60 to 70 decibels are identified as conditionally acceptable. For office and commercial land uses, CNEL values of 67.5 to 77.5 decibels are categorized as conditionally acceptable.

E.9.3 Local Noise Policies

The noise element of the Oakland Comprehensive Plan contains a general policy to prevent or reduce exposure to excessive or annoying noise. Policy recommendations in the noise element urge a serious consideration of noise impacts in the planning and design of new or expanded roadways, with incorporation of noise mitigation, such as depressed roadway and noise barriers, where feasible. Other transportation policy recommendations include the use of roadway designs that discourage through traffic on local streets and neighborhood designs that encourage pedestrian and bicycle use. Land use policy recommendations include using buffer areas (including off-street parking, greenbelts, or general commercial areas) to protect residential areas from activities that produce excessive noise, odors, or traffic.

In June 1996 the City of Oakland adopted new noise ordinance provisions for the Oakland Municipal Code and Oakland Planning Code (Ordinances 11893, 11894, and 11895). Appendix K provides a simplified summary of noise limits contained in various sections of the Oakland noise ordinances. Different sections of the ordinances use different noise measurement units as formal limits. Some sections reference maximum allowable noise levels while others specify a pattern of noise level exceedance limits. Other sections set time limits for the operation of specified noise sources without specifying numerical noise limits. To the extent possible, the various provisions have been converted into equivalent average noise level values that are more easily summarized and compared within Figure K-1 in Appendix K.

E.10. UTILITIES

Navy and DOD regulations outlined in the Navy's Environmental and Natural Resource Program Manual govern the operation of ships at sea.

E.10.1 Water Distribution System

The Safe Drinking Water Act outlines sampling for lead and copper in drinking water. The Navy's Environmental and Natural Resource Program Manual identifies requirements and responsibilities for the protection of drinking water supplies at Naval installations.

E.10.2 Sanitary Sewer System

NPDES permit requirements apply to the discharge of wastewater to the sanitary sewer.

E.10.3 Stormwater System

The stormwater system operates under a NPDES, Statewide General Industrial Storm Water Discharge Permit. Specifics of the stormwater monitoring program are discussed in Section 3.7 (Water Resources). Stormwater is not treated prior to discharge to San Francisco Bay.

E.10.4 Solid Waste Management

The Solid Waste Disposal Act of 1965, as amended by the Resource Conservation and Recovery Act (RCRA) in 1976, requires that federal facilities comply with all federal, state, interstate and local requirements regarding the disposal and management of solid waste. RCRA establishes public safety and health standards for the disposal of solid waste, including requirements for landfill liners and leachate collection and treatment. RCRA and the Military Construction Codification Act of 1982 also provide for various means of recovering value from solid waste. Wastes may be recycled, reclaimed, used as a fuel supplement, or sold for profit.

California AB 939 requires California counties to divert 25 percent of their solid waste from landfills by 1995 and 50 percent by 2000. California Senate Bill (SB) 1223 establishes state programs designed to increase recycling and to encourage the development of commercial markets for recyclable materials. In general, the state places the burden of action and responsibility on the county to meet the state requirements.

Coast Guard regulations require privately-owned vessels to dispose of garbage three miles out to sea or contain it while in port. No plastics may be dumped at sea or in port.

E.11. HAZARDOUS MATERIALS AND WASTE

The following is a brief discussion of the major federal laws and regulations that apply to hazardous materials and waste at the project site.

E.11.1 Resource Conservation and Recovery Act

In response to the need to more closely regulate the ongoing handling, storage, transportation, and disposal of hazardous wastes, the US Congress passed RCRA in 1976. RCRA presents the federal regulations for the operation of hazardous waste storage, treatment, and disposal sites. Prior to RCRA, the state of California had passed the Hazardous Waste Control Law (HWCL) in 1972. This law provides regulations that equal or exceed the federal standards set by RCRA for hazardous waste management. The state of California was given "interim authorization" to implement RCRA under through enforcement of the HWCL. Final authorization for the state to implement RCRA was given in 1993. The responsible agency for enforcement of RCRA and HWCL is Cal EPA's Department Of Toxic Substance Control (DTSC).

E.11.2 Comprehensive Environmental Response, Compensation, and Liability Act

Originally passed in 1980, CERCLA created national policies and procedures to identify and remediate sites previously contaminated by the release of hazardous substances. CERCLA formalized the process for identification of sites and the prioritization for the cleanup of sites through the National Contingency Plan (NCP). The NCP contains criteria for the evaluation of sites that provide the basis for the preliminary assessment and site inspection. The evaluation that results in a

priority ranking of the site that determines whether it should be placed on the National Priority List (NPL). Facilities placed on the NPL are commonly referred to as "Superfund" sites. As noted previously, FISCO is not on the NPL.

E.11.3 Community Environmental Response Facilitation Act

Congress amended CERCLA in 1992 through the passage of CERFA. The purpose of CERFA is to expedite the identification of uncontaminated real property, within closing federal facilities, which offers the greatest opportunity for reuse and redevelopment. Uncontaminated or "CERFA-eligible" property is defined as any real property on which no hazardous substances and no petroleum products were stored for one year or more, known to have been released, or disposed. CERFA also provided clarification as to when "all remedial action has been taken." CERFA defined that all remedial action has been taken if construction and installation of an approved remedial design has been completed and the remedy has been demonstrated to the Administrator to be operating properly and successfully. The carrying out of long-term pumping and treating, or operation and maintenance, after the remedy has been demonstrated to the administrator to be operating properly and successfully does not preclude the transfer of the property.

Identification of uncontaminated properties at FISCO is the responsibility of the Navy. EPA is the regulatory authority for enforcement of CERCLA, including the CERFA amendments. However, the EPA has joined with Cal EPA in the implementation of CERFA for DOD facilities in California. Cal EPA serves as the lead agency for closures of military bases, including FISCO, not listed in the NPL. Cal EPA generally follows EPA guidance for CERCLA sites.

For properties that cannot qualify as "CERFA-eligible," the CERFA law specifies that the deed for the transfer of subject property shall include a covenant warranting that all remediation necessary to protect human health and the environment with respect to any hazardous substance remaining on the property has been taken prior to the date of transfer and that any response action or corrective action found to be necessary after the date of transfer shall be conducted by the United States.

Properties that contain or potentially contain contamination cannot be transferred prior to environmental remediation. However, the DOD has established a policy for lease of these properties. The DOD with regulatory participation can develop a site-specific or supplemental environmental baseline survey, or in specific cases use the base-wide EBS and a finding of suitability to lease (FOSL) or finding of suitability to transfer (FOST) for the property. The FOSL may include specific land use restrictions to protect human health and the environment, and to ensure government access for final investigations and remediation. A FOST may be issued only for properties on which all remedial actions necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken (pursuant to CERCLA 120(h)(3)).

E.11.4 Aboveground and Underground Storage Tank Regulations

ASTs and USTs are subject to regulation by federal, state, and local agencies. Public agencies involved in the implementation and enforcement of AST and UST regulations are:

- EPA, Region IX, San Francisco, California
- State Water Resources Control Board, Sacramento, California
- California Air Resources Board, Sacramento, California
- Regional Water Quality Control Board, Oakland, California
- Bay Area Air Quality Management District, San Francisco, California
- Alameda County Environmental Health Dept., Oakland, California
- Oakland Fire Department

California has a cooperative agreement with EPA (1991) to implement AST and UST regulations through the SWRCB. California in turn delegates authority to county and city agencies for local implementation and enforcement of AST and UST regulations. The ACEHD are the local agencies responsible for the implementation and enforcement of AST, UST and hazardous materials regulations. The BAAQMD is responsible for the implementation and enforcement of air quality regulations in Alameda County. The OFD is responsible for enforcing the UFC as they apply to hazardous materials and tanks.

E.11.4.1 Federal Regulations

EPA issued final regulations in 40 CFR Parts 280 and 281, regarding USTs containing petroleum products and hazardous substances on September 23, 1988. The specific goals of the federal UST regulations are to: (1) prevent and detect UST leaks and spills; (2) correct environmental impacts resulting from UST leaks and spills; (3) assure UST owners and operators can pay for UST contamination; and (4) assure each state has an UST regulatory program that is at least as stringent as the federal regulations. The regulations that may apply to USTs are the following:

- Code of Federal Regulations (CFR), Title 40, Section 280, Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks;
- 40 CFR 109, Criteria for State, Local, and Regional Oil Removal Contingency Plan;
- 40 CFR 112, Oil Pollution Prevention (Spill Prevention Control and Countermeasures);
- 40 CFR 113, Liability Limits for Small Onshore Storage Facilities;
- 40 CFR 114, Civil Penalties for Violation of Oil Pollution Prevention Regulations; and

- Clean Air Act (CAA), 55 Federal Register, revised 1990.

E.11.4.2 Spill Prevention Control and Countermeasure (SPCC) Plan

Federal regulations for the prevention of and response to spills from storage tanks, include those facilities with an aggregate UST storage quantity of 42,000-gallons, or 1,320-gallon in AST storage or 660-gallons in one AST. These regulations are contained in Title 40 of the Code of Federal Regulations, Part 112 (40 CFR 112). In general, 40 CFR 112 outlines the requirements for facilities required to prepare a SPCC Plan, which includes a description of the UST facility, identifies potential spill hazards, discusses the current prevention procedures and personnel training and makes recommendations for corrective actions.

E.11.4.3 State Regulations

The state of California has adopted more stringent set of UST and AST regulations than those of the federal government. These tank regulations outline, the reporting, monitoring, closure, and tank system requirements for USTs and ASTs. The following state laws and regulations are applicable for regulating USTs and ASTs:

- California Health and Safety Code (CHSC), Division 20, Chapter 6.7, Sections 25280 through 25299.7 Underground Storage of Hazardous Substances, October 1990;
- CHSC, Chapter 6.5, Sections 25250 through 25250.25 Management of Used Oil;
- California Code of Regulations (CCR), Title 23 Waters, Division 3 State Water Resources Control Board, Chapter 16 Underground Tank Regulations, May 5, 1994;.
- CCR, Title 22, Division 4.5, Chapter 12, Standards Applicable to Generators of Hazardous Wastes; and
- CCR, Title 22, Division 4.5, Chapter 15, Interim Status for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage, and Disposal Facilities.

E.11.4.4 Local Fire Department Requirements

The local fire department enforces the tank regulations set forth in the CCR and the regulations pertaining to human and environmental protection in the Uniform Fire Code (UFC) (1994 edition), particularly Articles 52 and 79, for the construction, installation, operation, and closure of ASTs and USTs storing flammable and combustible materials. In addition, the local fire enforce local and state regulations in the California Fire Code and California Fire Code Standards and any local ordinance pertaining to the fire code.

E.11.5 Hazardous Waste Generator and Storage Regulations

Business that generates and stores hazardous waste are required to file hazardous waste contingency and business plans set forth in the state hazardous waste program, as specified in, CCR, Title 22, Division 4.5, Chapter 12, Standards Applicable to Generators of Hazardous Waste and Chapter 15 Interim Status Standards for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage and Disposal Facilities. These regulations outline the requirements for pre-transportation and accumulation of wastes, personnel training, preparedness and prevention, contingency plan and emergency procedures and tank systems requirements.

E.11.6 Asbestos Regulations

Removal of asbestos containing material (ACM) is regulated by EPA, Occupational Safety And Health Administration (OSHA), and the state of California. Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the Clean Air Act, which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). The NESHAP regulations address the demolition or renovation of buildings with ACM. The Toxic Substances Control Act (TSCA) and the Asbestos Hazardous Emergency Response Act (AHERA) provide the regulatory basis for handling ACM in school buildings. AHERA and OSHA regulations cover worker protection for employees who work around or remediate ACM.

Renovation or demolition of buildings with ACM has the potential to release asbestos fibers into the air. Asbestos fibers could be released due to disturbance or damage of various building materials, such as pipe and boiler insulation, acoustical ceilings, sprayed-on fireproofing, and other materials used for soundproofing or insulation. Only friable ACM, such as those listed above, are considered a health risk. Nonfriable ACM, such as transite piping, shingles, or floor tile, are not a health risk unless they are mechanically abraded in such a way as to produce dust.

E.11.7 Lead Paint Regulations

In 1992, Congress enacted the Residential Lead-based Paint Hazard Reduction Act of 1992, Title X of the Housing & Community Development Act (Public Law No. 102-550). As part of Title X, Congress amended the 1971 Lead-based Paint Poisoning Prevention Act (42 USC Section 4801-4846) and added a new Title IV to the Toxic Substances Control Act. Under this law, certain federally owned housing constructed prior to 1960 must be inspected for lead-based paint and lead-based paint hazards must be abated. Federal owned housing constructed after 1969 and before 1978 must be inspected for lead-based paint hazards and the data disclosed to prospective purchasers (42 USC Section 4822). The act also requires disclosure of lead-based paint hazard information.

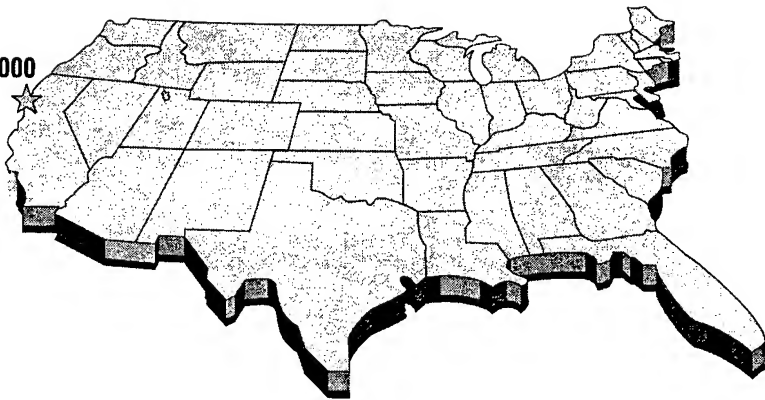
E.11.8 PCB Regulations

The disposal of these PCBs is regulated under TSCA, which banned the manufacture and distribution of PCBs except for PCBs used in enclosed systems.

By definition, PCB equipment contains PCB concentrations of 500 parts per million (ppm) or more, whereas PCB-contaminated equipment contains PCB concentrations of 50 ppm or greater but less than 500 ppm. The EPA, under TSCA, regulates the removal and disposal of all sources of PCBs containing 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment. Primary federal regulations for controlling existing PCBs are found at 40 CFR Part 761. California regulations are more stringent than their federal equivalents and are found at California Code of Regulations Title 22. Within California, a waste fluid containing five ppm PCBs or more is regulated as hazardous.

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FISCO/Vision 2000



APPENDIX F SOCIOECONOMICS

POPULATION

F-2

HOUSING

F-14

Appendix F

Socioeconomics

This Appendix presents information on existing socioeconomic conditions within the region of influence at several geographic levels. First, an overview of regional characteristics is provided for the three counties (Alameda, Contra Costa, and San Francisco) most likely to be affected by the project. For context, a brief description of conditions in the nine-county Bay Area as a whole also is provided. Then a description of citywide characteristics is provided for the City of Oakland, the jurisdiction in which the project is located. Finally, information on community-specific characteristics is provided for the West Oakland neighborhood, located south of Highway 80 and west of Highway 980.

Information about regional socioeconomic conditions provides a context for understanding the project site. Although workers may commute to the project site from other parts of the Bay Area, the majority of the Port of Oakland workforce lives in Alameda, Contra Costa, and San Francisco counties. According to the Local and Regional Economic Impact of the Port of Oakland, approximately 80 percent of the port employees reside in this three-county region, and within this region, more workers reside in Oakland than in any other city (O'Connell 1991). Oakland is also the jurisdiction in which the project is located. The community characteristics of West Oakland are described in detail because this area is closest to the project site. In addition, West Oakland has a predominantly poor minority population, making the evaluation of environmental justice considerations an important component of the socioeconomic impact analysis.

Major topics addressed in this section include population, income, employment, housing, and environmental justice. The base year used in describing existing conditions is 1990. This is the year of the latest US Census and the year for which data are most consistently available. Other primary data sources include the Association of Bay Area Governments (ABAG), State Economic Development Department (EDD), State Department of Finance (DOF), the US Navy, the Port

of Oakland (Port), the City of Oakland, and the Coalition for West Oakland Revitalization (CWOR).

F.1 POPULATION

This section describes the population growth that occurred throughout the region between 1980 and 1990, based on US census data. Population projections for 2010, based on estimates prepared by ABAG, also are provided. Population increases and rates of change are summarized on Table F-1 and are discussed in each subsection below. Table F-2 presents information on the racial characteristics of the population in each geographic area. This information also is discussed and compared in the sections below.

Table F-1
Regional Population Trends and Projections
1980, 1990, and 2010

Area	1980	1990	1980-1990 % Change	2010	1990-2010 % Change
Bay Area	5,179,759	6,020,147	+16.2	7,539,600	+25.2
Alameda County	1,105,379	1,276,702	+15.5	1,547,000	+21.2
Contra Costa County	656,380	803,732	+22.4	1,104,700	+37.4
City and County of San Francisco	678,974	723,959	+6.6	819,000	+13.1
City of Oakland	339,337	372,242	+9.7	406,600	+9.2
West Oakland	21,130	24,188	+14.5	NA	NA

Source: ABAG Projections 1994.
1980 and 1990 US Census.

F.1.1 Regional Overview

Population in the nine-county Bay Area increased 16 percent between 1980 and 1990, reaching just over six million. ABAG projects that the region's population will exceed 7.5 million by 2010. This represents a slower rate of growth than was experienced in the 1980's— an average annual increase of 1.26 percent, compared with a 1.62 percent average annual increase between 1980 and 1990. Alameda, Contra Costa, and San Francisco Counties contain nearly half (47 percent) of the total population of the Bay Area.

In 1990, the racial composition of the Bay Area's population was approximately 69 percent Caucasian, nine percent African American, less than 1 percent Native American, 15 percent Asian, and six percent of other racial origins. Persons of Hispanic origin made up 15 percent of the population. Between 1980 and 1990, the racial makeup of the regional population remained relatively constant, except that the proportion of Caucasians decreased (from 76 to 69 percent), while the percent of Asians increased (from 9 to 15 percent). The percentage of persons of Hispanic

origin also increased, from 12 to 15 percent. The percentage of the regional population comprised of African Americans remained constant.

Table F-2
Regional Racial Composition Trends,
1980 and 1990

Area	Percent of Total Population					Hispanic Origin
	Caucasian	African-American	Native American	Asian	Other	
Bay Area						
1980	76.1	9.0	0.7	8.9	5.3	12.2
1990	68.9	8.9	0.6	15.3	6.4	14.9
Alameda County						
1980	67.9	18.4	0.7	7.8	6.1	11.8
1990	59.6	17.9	0.7	15.1	6.8	14.2
Contra Costa County						
1980	81.5	9.2	0.6	4.7	4.1	8.5
1990	76.0	9.3	0.7	9.6	4.5	11.4
City and County of San Francisco						
1980	58.2	12.7	0.5	21.7	6.8	12.3
1990	53.6	10.9	0.5	29.1	5.9	13.9
City of Oakland						
1980	38.2	46.9	0.6	7.8	6.4	9.6
1990	32.5	43.9	0.6	14.8	8.3	13.9
West Oakland						
1980	6.7	86.6	0.3	2.7	3.8	4.6
1990	9.3	75.6	0.5	9.1	5.7	8.8

Source: 1980 and 1990 US Census.

F.1.2 Alameda County

In 1990, Alameda County was the second most populous county in the Bay Area, after Santa Clara County, and it was the only county in the nine-county region to have four cities with populations of more than 100,000 residents—namely Oakland, Fremont, Hayward, and Berkeley. The county's population increased by more than 15 percent between 1980 and 1990, and it is projected to increase by an additional 21 percent between 1990 and 2010. Most of the projected growth, however, will occur in the Livermore/Amador Valley, which is expected to experience extremely high growth rates during this period. This eastern portion of the county includes the communities of Dublin, Livermore, and Pleasanton. Growth in the western portion of the county, which includes Oakland, is expected to be quite slow during this period, with the exception of Emeryville. While Emeryville is expected to attract more than 4,000 new residents, for a population increase of 72 percent, the populations of Oakland, Berkeley, Alameda, and

Albany all are expected to increase by less than 10 percent over the 20-year period. The Association of Bay Area Governments (ABAG) Projections '94 states that population growth in these areas is projected to be minimal since "much of western Alameda County is expected to reach buildout by the year 2000, especially along the bay plain" (ABAG 1993).

Of the approximately 1.28 million people living in Alameda County in 1990, approximately 60 percent were Caucasian, 18 percent were African American, less than one percent were Native American, 15 percent were Asian, and seven percent were of other racial origins. In addition, 14 percent of Alameda County residents identified themselves as being of Hispanic origin. The racial composition of Alameda county is different from that of the Bay Area as a whole. The percentage of Caucasian residents in the County is lower, while the percentage of African American residents is twice as high as it is in the region. The percentages of other racial groups are comparable to those found in the region. As in the region, the percentage of Caucasians in Alameda County has declined since 1980, while the percentage of African Americans has held steady, and the percentage of Asians has increased.

F.1.3 Contra Costa County

Contra Costa County's population increased by 22 percent between 1980 and 1990. This was the third highest rate of growth for any county in the Bay Area, behind Solano and Sonoma Counties. ABAG projects that population growth in Contra Costa County will increase by an additional 37 percent between 1990 and 2010.

Census data indicate that in 1990, the county's population was approximately 76 percent Caucasian, nine percent African American, less than one percent Native American, 10 percent Asian, and five percent persons of other racial origins. Persons of Hispanic origin made up about 11 percent of the county's population in 1990. The percentage of Caucasian residents in the county is higher than that of the region, and the percentage of Asians is lower. The percentage of Caucasian Contra Costa County residents has decreased since the 1980 census, while the percentages of all other racial groups have increased. Most groups had only slight increases, except for Asians, whose proportion of the total population doubled during the decade.

F.1.4 City and County of San Francisco

The City and County of San Francisco's population increased by less than 7 percent between 1980 and 1990. This was the second slowest rate of growth for any county in the Bay Area, above only Marin County, and only a fraction of the state of California's 25.7 percent growth rate for this same period (EDD 1994). ABAG projects that population growth will continue to be slow between 1990 and 2010. San Francisco's population is projected to increase by 13 percent during the 20-year forecast period, reaching 819,000 in 2010. By then, the city will have

only 11 percent of the region's population, compared to 13 percent in 1980 and 12 percent in 1990.

Census data indicate that in 1990 the city's population was approximately 54 percent Caucasian, 11 percent African American, less than one percent Native American, 29 percent Asian and six percent of other racial origins. Persons of Hispanic origin made up 14 percent of the city's population. The percentage of Caucasian residents in the city is lower than in the region, while the percentage of Asians is more than double the region's. The percentages of both Caucasian and African American San Francisco residents have decreased since the 1980 census, while the percentages of Hispanic and Asian residents have increased.

F.1.5 City of Oakland

According to US Census data, the City of Oakland's population increased by almost 10 percent between 1980 and 1990. Oakland contained the largest population in Alameda County in 1990, and it is ranked as the third most populous city in the region (ABAG 1993). ABAG projects that Oakland's population will increase by an additional nine percent between 1990 and 2010. This rate of increase for the 20-year period, however, is less than half the growth rate experienced during the 1980s.

In 1980, Oakland's population was 38 percent Caucasian, 47 percent African American, less than one percent Native American, eight percent Asian, and six percent of other racial origins. Almost 10 percent of the city's residents identified themselves as being of Hispanic origin. In 1990, the percentages of Oakland's Caucasian and African American populations declined to 33 percent and 44 percent, respectively, while the Native American population remained less than one percent. Over the same period, the city's Asian population nearly doubled, to 15 percent, while persons of other racial origins increased slightly, to eight percent. The percentage of persons of Hispanic origin also increased, from 10 to 14 percent in 1990.

F.1.6 West Oakland

Sixteen census tracts (4014 through 4027) lie within West Oakland, which is located south of Highway 80, west of Highway 980, north of the Oakland Estuary, and east of San Francisco Bay in the City of Oakland. The population of this community increased from 21,130 in 1980 to 24,188 in 1990, for a rate of growth that was about fifty percent higher than Oakland's overall growth rate for the same period.

West Oakland has had a long history of being a racially and culturally diverse community. In the early 1900s, the population was mostly Irish, but there were also large numbers of Chinese and Portuguese settlers, as well as a small core of African Americans who were families of Pullman porters who had moved there to be close to the railroad terminus. During World War II, many more African

Americans settled in West Oakland to work at the Kaiser shipyards. Many chose to stay even after the war ended and industrial activity declined (CWOR 1994).

Census data indicate that West Oakland's racial composition changed substantially between 1980 and 1990. While the absolute number of African Americans decreased very slightly during this period (from 18,278 in 1980 to 18,262 in 1990), the percentage of the community's population represented by this group decreased substantially, from 87 percent in 1980 to 76 percent in 1990. All other racial groups increased both in number and percentage.

The racial composition of West Oakland is distinctly different from that of the City of Oakland as a whole, as well as that of the region. More than three-quarters of West Oakland's population is African American, compared with 44 percent citywide and nine percent in the region. The second largest racial group is Caucasians, at nine percent, compared with 33 percent citywide and 69 percent regionwide. West Oakland's proportions of Asian and Hispanic residents are considerably lower than both the city's and the region's, although these segments of the population are growing.

F.1.7 Income

This section describes income characteristics in terms of mean household income, per capita income, and the percentage of persons living below the poverty level. Table F-3 presents mean household income and per capita income information, as reported by the US Census in 1980 and 1990. This table provides a basis for comparing data aggregated for the census tracts in West Oakland with other regional data. Table F-3 also provides data on the percentage of persons living below poverty level for each geographic location.

F.1.8 Regional Overview

According to US Census data, per capita income in the region more than doubled between 1980 and 1990, increasing from \$9,369 to \$19,716 (Table F-3). The percentage of persons living below the poverty level declined slightly over the decade, from 8.9 to 8.5. While the mean household income in the region more than doubled between 1980 and 1990, ABAG estimates the real increase at 24 percent, adjusted for inflation. ABAG notes that a substantial portion of this increase in household income came from an increase in the number of workers per household, rather than increased individual earnings. Recessionary forces have seriously weakened income growth in the region during the 1990s.

F.1.9 Alameda County

The mean household income in Alameda County more than doubled, from \$21,773 in 1980 to \$45,995 in 1990 (Table F-4). Adjusted for inflation, however, the mean household income rose only 23 percent during this period (ABAG 1993). According to US Census data, the per capita income in the county was \$17,547 in 1990. The percentage of the population living below the poverty level decreased slightly, from 11.3 percent in 1980 to 10.6 percent in 1990.

Table F-3
Regional Income and Poverty Level Trends,
1980 and 1990

Area	Mean Household Income	Per Capita Income	Percentage of Persons below Poverty Level
Bay Area			
1980	24,304	\$ 9,369	8.9
1990	52,082	19,716	8.5
Alameda County			
1980	21,773	8,537	11.3
1990	45,995	17,547	10.6
Contra Costa County			
1980	26,539	9,823	7.6
1990	55,033	20,748	7.3
City and County of San Francisco			
1980	20,552	9,265	13.7
1990	45,664	19,695	12.7
City of Oakland			
1980	17,970	7,701	18.5
1990	37,100	14,676	18.8
West Oakland			
1980	9,986	4,083	33.1
1990	21,940	7,763	36.4

Source: US Census, 1980 and 1990.

F.1.10 Contra Costa County

In 1990, households in Contra Costa County had a mean household income of \$55,033, more than double the mean in 1980 (Table F-3). Adjusted for inflation, the increase in the mean household income was only 19 percent. According to US Census data, the per capita income in the county was \$20,748, more than double the county's 1980 per capita income of \$9,823 (Table F-4). While the number of persons living below the poverty level increased by 8,781 between 1980 and 1990, the proportion of the county's population below the poverty level remained relatively constant (7.3 percent in 1990, compared with 7.6 percent in 1980).

F.1.11 City and County of San Francisco

The mean household income in San Francisco in 1990 was \$45,664, compared with \$20,552 in 1980 (Table F-3). Adjusted for inflation, this increase was 34 percent over the decade (ABAG 1993). According to US Census data, the per capita income in San Francisco was \$19,675 in 1990, more than double the per capita income of \$9,265 in 1980. The percentage of persons living below the poverty level declined slightly, from 13.7 percent to 12.7 percent.

Table F-4
Regional Labor Force, Civilian Employment and Unemployment,
1980 and 1990

Area	No. of Persons 16 and Over	No. in Labor Force	% in Labor Force	No. of Civilians in Labor Force	No. of Civilians Employed	% of Unemployed
Alameda County						
1980	866,056	560,012	64.7	552,621	514,727	6.9
1990	1,005,755	689,517	68.6	676,896	635,840	6.1
Contra Costa County						
1980	500,757	326,530	65.2	324,216	305,313	5.8
1990	622,157	430,746	69.2	429,902	406,507	5.0
City and County of San Francisco						
1980	579,408	370,497	63.9	364,689	342,484	6.1
1990	620,818	417,147	67.2	412,385	386,530	6.3
City of Oakland						
1980	267,635	159,355	59.5	157,519	142,699	9.4
1990	288,543	181,419	62.9	179,513	162,488	9.5
West Oakland						
1980	15,652	6,536	41.8	6,257	4,875	22.1
1990	17,262	8,453	49.0	7,519	6,042	19.6

Source: US Census, 1980 and 1990.

F.1.12 City of Oakland

The mean household income in Oakland in 1990, was \$37,100, more than double the 1980 figure of \$17,970 (Table F-3). ABAG estimates the real increase as 20 percent, adjusted for inflation (ABAG 1993). Oakland's per capita income in 1990 was \$14,676, an increase of 90 percent from 1980, when the per capita income was \$7,701. Unlike the region and the other two counties, the percentage of persons living below poverty in Oakland rose between 1980 and 1990, from 18.5 percent to 18.8 percent. The percentage of persons living below the poverty level in Oakland is more than double the regionwide percentage.

F.1.13 West Oakland

Income statistics for West Oakland reveal it as a very poor community, relative to the rest of the City of Oakland, Alameda County, and the region. The mean household income more than doubled between 1980 and 1990, but it remained more than 40 percent below the citywide mean household income and less than half the countywide mean (Table F-3). Per capita income rose 90 percent between 1980 and 1990, from \$4,083 to \$7,763. This was roughly half the citywide per capita income and one-third the countywide per capita income. In West Oakland, as in the City of Oakland as a whole, both the number and percentage of persons living in poverty increased between 1980 and 1990, but West Oakland's percentage increased more markedly, from 33.1 percent in 1980 to 36.4 percent in 1990. This

is almost double the citywide percentage of persons living below poverty, and it is more than four times the 8.5 percent found regionwide.

F.1.14 Employment

This section provides information on labor force, unemployment rates and employment by industry. The first subsection below provides an overview of employment trends by sector for the nine-county Bay Area. Subsequent sections describe labor force participation rates, the number of persons employed, unemployment rates and employment by sector for each of the three counties, the City of Oakland, and West Oakland. A discussion of FISCO and Port-related employment is included in the West Oakland section.

F.1.15 Regional Overview

The nine counties that comprise the Bay Area share a diversified and interconnected regional economy. San Francisco has served as a major financial and commercial center for the region, while the East Bay counties have attracted considerable industrial and manufacturing growth. Economic growth in the region was very strong from the 1940s until the mid-1970s. Since then, economic growth has slowed and the region has experienced several recessions. ABAG predicts that job growth from 1990 to 2010 will continue to be slow, relative to previous decades, and that the decentralization of jobs away from San Francisco to outlying suburbs will continue. Since 1980, the percentage of jobs in the services and retail trade sectors has been growing, while jobs in manufacturing and government have been shrinking. These trends are also expected to continue to 2010 (ABAG 1993).

Employed residents and unemployment. The number of employed Bay Area residents increased from 2.5 million in 1980 to 3.1 million in 1990, an increase of 24 percent. Employment growth is expected to slow considerably between 1990 and 2010, however, due mainly to the recession experienced in the 1990s. Over the 20-year forecast period, the number of employed residents in the region is expected to increase to 3.9 million by 2010, for an increase of about 23 percent. The rate of growth in the number of employed residents during these two decades, therefore, will be less than the growth rate that took place during the single decade between 1980 and 1990 (ABAG 1993).

Unemployment rates in the nine Bay Area counties, as calculated by California's Economic Development Division, ranged from 2.7 percent in Marin County to 5.6 percent in Solano County in 1990. Unemployment rates in the three-county region were in the middle of this range—4.2 percent in Alameda County, 4.3 percent in Contra Costa County, and 4.0 percent in San Francisco County, compared with the statewide unemployment rate of 5.6 percent. Unemployment is calculated by EDD using an economic model, resulting in unemployment rates that are different from (and lower than) the civilian unemployment rates reported by the US Census (Champlain 1996). Table F-4 shows unemployment rates derived from the census, so that comparisons can be drawn between West Oakland and the rest of the region.

Employment by sector. Table F-5 provides an overview of employment by selected industries for the three-county region, for the City of Oakland, and for West Oakland in 1990. As indicated on the table, the US Census for that year presents data for seven industrial sectors. All areas share a generally consistent pattern in the proportion of employed residents by sector. Nearly half of the three-county region's employed persons (46 percent) work in two of the industrial sectors, professional and related services (25 percent) and wholesale and retail trade (21 percent). These are followed, in descending order, by manufacturing, 13 percent; fire, insurance, and real estate (FIRE), nine percent; transportation, communications, and utilities - 9 percent; business and repair services, six percent; and construction, six percent.

F.1.16 Alameda County

Employed residents and unemployment. The number of employed Alameda County residents increased by 24 percent between 1980 and 1990. Growth in the number of employed residents is expected to slow considerably between 1990 and 2010, however, with the number of employed persons projected to increase by 20 percent over the 20-year period. The cities expected to experience the greatest increases in the number of employed residents during these two decades are Oakland, Livermore, Dublin, and Pleasanton (ABAG 1993).

As shown on Table F-4, 69 percent of persons 16 and over living in Alameda County were in the labor force in 1990, an increase from 65 percent in 1980. Alameda County's civilian unemployment rate in 1990 was 6.1 percent, down from 6.9 percent in 1980.

Employment by sector. Table F-5 includes a breakdown of employment by industrial sector in Alameda County in 1990, as reported by the US Census. The highest percentage of residents (46 percent) were employed in two sectors, the professional and related services sector (25 percent), and the wholesale and retail trade sector (21 percent). The lowest percentage of residents were employed in the Construction sector (six percent). The percentages of county residents employed in other industrial sectors were manufacturing, 16 percent; transportation, communications, and utilities, nine percent; FIRE, seven percent; and business and repair services, six percent.

F.1.17 Contra Costa County

Employed residents and unemployment. Table F-4 summarizes labor force and employment trends in Contra Costa County. The number of employed Contra Costa County residents increased by 33 percent between 1980 and 1990. This was considerably higher than the 24 percent growth rate of employed persons in the Bay Area as a whole. Growth in the number of employed residents is expected to slow between 1990 and 2010, with a 38 percent increase projected for the 20-year forecast period. This growth rate projection nevertheless is higher than the 23 percent increase projected for the Bay Area as a whole between 1990 and 2010.

Table F-5
Number of Employed Residents by Selected Industries, 1990

Area	Employed Persons 16 and Over	Construction	Manufacturing	Transportation, Communications and Other Utilities	Wholesale and Retail Trade	Fire, Insurance and Real Estate	Business and Repair Services	Professional and Related Services
Alameda County	635,840	36,508	100,180	56,626	130,601	47,121	38,561	161,248
Contra Costa County	406,507	31,543	47,056	34,150	84,165	46,217	23,068	96,243
City and County of San Francisco	386,530	16,620	35,748	31,418	80,990	41,617	27,292	105,373
City of Oakland	162,488	8,492	17,284	14,668	30,258	12,130	10,793	47,659
West Oakland	6,042	326	591	577	1,180	251	499	1,671

Source: 1980 and 1990 US Census.

As shown in Table F-4, 69 percent of persons 16 years or over living in the county were in the labor force in 1990, an increase from 65 percent in 1980. Contra Costa County's civilian unemployment rate in 1990 was 5.0 percent, down from 5.8 percent in 1980.

Employment by sector. As shown on Table F-5, the highest percentage of Contra Costa County residents in 1990 were employed in the professional and related services sector (24 percent), and the wholesale and retail trade sector (21 percent). Fewer residents were employed in manufacturing, 11.6 percent; FIRE, 11.4 percent; transportation, communications, and utilities, 8.4 percent; construction - 7.8 percent; and services, six percent.

F.1.18 City and County of San Francisco

Employed residents and unemployment. The number of employed residents in the City and County of San Francisco increased 13 percent between 1980 and 1990 (Table F-4). Over the next two decades, the rate of growth is expected to be slower, with the number of employed residents projected to increase by only 13 percent over the 20-year period (ABAG 1993).

As shown on Table F-4, 67 percent of persons 16 and over living in San Francisco were in the labor force in 1990, compared with 64 percent in 1980. The civilian unemployment rate for the City and County of San Francisco was 6.3 percent in 1990, compared with a rate of 6.1 percent in 1980.

Employment by sector. In 1980, the highest percentage of San Francisco residents were employed in the professional and related services sector (27 percent), and wholesale and retail trade sector (21 percent), and the smallest percentage were employed in the construction sector (four percent). Of the remaining industrial sectors, 11 percent were employed in the FIRE sector, nine percent in manufacturing, eight percent in transportation, communications and utilities, and seven percent in business and repair services (Table F-5).

F.1.19 City of Oakland

Employed residents and unemployment. As indicated on Table F-4, the City of Oakland experienced a relatively low rate of growth in employment between 1980 and 1990, about 14 percent. Between 1990 and 2010, the employment growth rate for Oakland is projected to drop substantially lower than the growth rates for Alameda County and the three-county region as a whole during the same period. This projection reflects job losses due to the severe economic slowdown in California between 1990 and 1995, combined with the effects of military base closures (ABAG 1993).

As shown on Table F-4, 63 percent of persons 16 and over living in Oakland were in the labor force in 1990, compared with 60 percent in 1980. The City of Oakland's civilian unemployment rate in 1990 was 9.5 percent. This rate was substantially higher than those of Alameda County and the region.

Employment by sector. As shown on Table F-5, the distribution of employed Oakland residents among the selected industrial sectors generally conforms to the distribution within the three-county region as a whole. professional and related services employ the most residents, 29 percent, followed by wholesale and retail trade, at 19 percent. The Construction industry employs the lowest percentage of residents, five percent. Other sectors are manufacturing, 11 percent; transportation, communications and utilities, nine percent; FIRE, eight percent; and business and repair services, seven percent.

F.1.20 West Oakland

Employed residents and unemployment. West Oakland had proportionately fewer residents in the labor force compared with other parts of the region in both 1980 and 1990 (Table F-3). Less than half (49 percent) of persons 16 and over in West Oakland were in the labor force. This represented a substantial increase since 1980, when the proportion was 42 percent, but it is considerably lower than the percentages of persons in the labor force in Oakland (63 percent) and the three counties (67-69 percent) in 1990. The percentage of unemployed persons in West Oakland was 19.6 percent in 1990, down from 22.1 percent in 1980.

Employment by sector. As shown on Table F-5, the pattern of employment of West Oakland residents is similar to that of Oakland and the region, with a slightly greater proportion of residents employed in the transportation, communications and other utilities and business and repair services sectors. professional and related services employed the highest percentage of West Oakland residents (28 percent). This was followed by wholesale and retail trade - 20 percent; manufacturing, 10 percent; transportation, communications and other utilities, 10 percent; business and repair services, eight percent; construction, five percent; and FIRE, four percent.

Port of Oakland. According to the Port of Oakland Maritime Economic Impact Study, maritime activity related to the Port employed 6,694 persons in 1990. Table F-6 shows the number of employees by type. The largest percentage of jobs were in trucking (23 percent), government (15 percent), and warehousing (14 percent). Almost three-fourths of these workers lived in the three-county region, and more than 18 percent lived in Oakland in 1990 (Port of Oakland 1990).

This maritime activity at the Port generated more than \$220 million in personal income from direct jobs alone in 1990. The Port estimates that the direct jobs at its maritime facilities supported an additional 2,900 induced jobs in the region as a result of maritime industry worker spending, for a total of almost 10,000 jobs. In addition, Port activities indirectly support a wide variety of other types of businesses, such as importers and exporters, throughout the region.

Table F-6
Employment Related to Maritime Activity at the Port of Oakland, 1990

Employment Sectors	Number of Employees	Percent
Railroad	570	8.5%
Trucking	1,549	23.1%
Terminal employees	411	6.1%
ILWU (longshore)	562	8.4%
Towing	31	0.5%
Pilots	12	0.2%
Agents	472	7.1%
Surveyors/chandlers	30	0.4%
Forwarders	558	8.3%
Warehousing	924	13.8%
Container repair/storage	29	0.4%
Government/military	993	14.8%
Marine construction/shipyards	148	2.2%
Barge	27	0.4%
Shippers/consignees	100	1.5%
Port of Oakland staff	202	3.0%
Banking/insurance	75	1.1%
Total direct jobs	6,694	100.0%

Source: Port of Oakland, 1996.

FISCO. An estimated 5,591 workers were directly employed at FISCO facilities in 1990. These included 3,265 workers at shore facilities, plus 2,326 personnel associated with ships homeported at FISCO. Almost all of these jobs (5,327 or 95 percent) were located on FISCO parcels 4 and 5. Assuming the same multiplier for these jobs as for the Port's maritime jobs, these direct jobs would have supported an additional 2,422 jobs, for a total of over 8,000 jobs.

F.2 HOUSING

This section provides information on housing supply and housing costs in the project vicinity and the region. Table F-7 presents an overview of regional housing characteristics and trends, based on 1980 and 1990 US Census data. The table and narrative discussion include information on housing trends and vacancy rates for West Oakland, as well as for the City of Oakland, the three counties, and the region.

Table F-7
Regional Housing Characteristics and Trends, 1980 and 1990

Area	No. of Housing Units	Vacancy Rate	Median Value- Owner-Occupied House	Median Rent
Bay Area				
1980	2,061,343	4.2	\$ 98,100	\$ 285
1990	2,365,323	5.0	255,476	690
Alameda County				
1980	444,607	4.1	84,900	240
1990	504,109	4.9	225,300	626
Contra Costa County				
1980	251,951	4.0	94,300	266
1990	316,170	5.0	219,400	613
City and County of San Francisco				
1980	316,608	5.7	103,900	266
1990	328,471	7.0	298,900	613
City of Oakland				
1980	150,274	5.7	66,600	202
1990	154,737	6.6	117,400	485
West Oakland				
1980	9,666	11.7	35,921	126
1990	9,866	12.0	101,871	323

Source: 1980 and 1990 US Census.

F.2.1 Regional Overview

The housing stock in the nine-county Bay Area increased by approximately 15 percent between 1980 and 1990, reaching almost 2.4 million units. Almost half of the region's housing units are located in three counties— Alameda, Contra Costa, and San Francisco. The housing vacancy rate in the Bay Area as a whole was 5.0 percent in 1990, with a 3.2 percent vacancy rate for units that were actually available for sale and for rent.

Of the occupied housing units in the region in 1990, 56 percent were owner-occupied, and 44 percent were renter-occupied. The median rent in the Bay Area was \$690 in 1990. The median value of an owner-occupied unit was \$255,476. Between 1980 and 1990, the median value of a home in the Bay Area increased by more than 160 percent.

F.2.2 Alameda County

There were just over 500,000 housing units in Alameda County in 1990. The county's housing stock had increased by 13 percent since 1980, adding about 60,000 new housing units. Of the total housing units in the county in 1990, 4.9

percent were vacant. The vacancy rate for units available for rent and for sale was 3.0 percent.

The owner-occupancy rate in the county in 1990 was 53 percent. The median rent in Alameda County was \$626. The median home value was \$225,300. Home values increased by more than 165 percent from 1980, when the median home value in the county was \$84,900.

F.2.3 Contra Costa County

Contra Costa County's housing stock increased 26 percent between 1980 and 1990 (Table F-7). The vacancy rate for the total housing stock was 5.0 percent, up from 4.0 percent in 1980. The vacancy rate for units actually available for sale and for rent was 3.2 percent.

In 1990, 64 percent of Contra Costa's housing units were owner-occupied. The median value of owner-occupied homes was \$219,400. This reflects an increase of 133 percent from the 1980 median value of \$94,300. Nonetheless, this value is the lowest of the three counties, which may account for the higher rate of owner occupancy. The median rent was \$613 in 1990, compared to \$266 in 1980.

F.2.4 City and County of San Francisco

San Francisco had 328,471 housing units in 1990. The city's housing stock had increased by only four percent since 1980, reflecting the relative scarcity and high cost of land available for residential development, as well as the continuing suburbanization of the region. The vacancy rate in the city in 1990 was 7.0 percent, up from 5.7 percent in 1980. The vacancy rate for units actually available for sale and for rent, however, was 4.3 percent.

In 1990, 35 percent of homes were owner-occupied. This is considerably below the regionwide rate of 56 percent and reflects San Francisco's high housing costs relative to the rest of the region. The median value of an owner-occupied unit in 1990 was \$298,900, a 188 percent increase from 1980, when the median value was \$103,900. Median rent in San Francisco was \$613 in 1990, compared to \$266 in 1980.

F.2.5 City of Oakland

There were 154,737 housing units in Oakland in 1990. The city's housing stock had increased by only three percent since 1980, when there were 150,274 housing units. This slow rate of increase reflects the fact that Oakland's residential land is mostly built out. Of the total number of housing units in the city in 1990, 5.7 percent were vacant. This rate was slightly higher than Alameda County's vacancy rate of 4.9 percent. The vacancy rate for units in the city actually available for rent and for sale was 4.2 percent.

The owner-occupancy rate in the City of Oakland in 1990 was 39 percent, considerably lower than Alameda County's overall owner occupancy rate of 53

percent. The median rent was \$485, and the median value of an owner occupied home was \$117,400. Home values increased by 76 percent between 1980 and 1990. This is less than half the percentage increase experienced regionwide.

F.2.6 West Oakland

West Oakland contained almost 10,000 housing units in 1990. The local housing stock had increased only two percent between 1980 and 1990. Of the total housing units in West Oakland in 1990, 12.0 percent were vacant, more than double the 5.7 vacancy rate for the city. The vacancy rate for units in the area actually available for rent and for sale in 1990 was 6.7 percent.

The owner-occupancy rate in West Oakland in 1990 was 18 percent— only half the citywide and one-third the regionwide owner-occupancy rate. This reflects the large number of public housing units in West Oakland. There are more than 1,000 units of government-sponsored housing in the community. Most of these are concentrated in the Campbell Village, Acorn, and Oak Center projects (CWOR 1994).

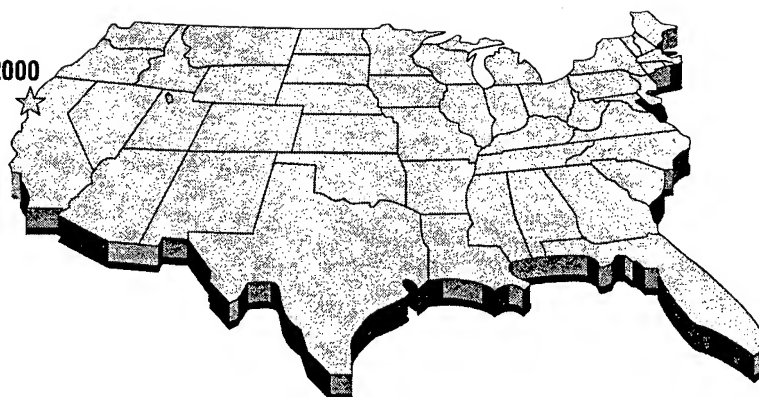
In 1990, the median rent in West Oakland was \$323 and the median value of an owner-occupied home was \$101,871. Home values increased by 184 percent from 1980, when the median value was \$35,921. West Oakland's housing stock is some of the oldest in the city. Many of the structures are not up to code or lack adequate heating or plumbing. CWOR reports that West Oakland contains 1,359 vacant and boarded up structures, which represents about 14 percent of all housing in the community. At the same time, the neighborhood's proximity to downtown Oakland has begun attracting a new population, which has raised fears about gentrification pressures (CWOR 1994).

F.2.7 FISCO

There are three units of housing on FISCO that house Navy personnel: Quarters A (Buildings 324), Quarters B (Buildings 325), and Quarters C (Buildings 323). These three units are located on the block bounded by 3rd Street, E Street, 4th Street, and G street in the northern portion of FISCO.

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FISCO/Vision 2000



APPENDIX G CULTURAL RESOURCES

MEMORANDUM OF AGREEMENT SIGNED IN 1994

FIRST AMENDED MEMORANDUM OF AGREEMENT SIGNED IN 1997

MEMORANDUM OF AGREEMENT
SUBMITTED TO THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
PURSUANT TO 36 CFR SECTION 800.6(a)

WHEREAS, the Department of the Navy (Navy) has determined that the leasing of approximately 220 acres of the Fleet Industrial Supply Center (FISC), Oakland, California, (the undertaking) will have an effect on the Naval Supply Center Oakland Historic District, a property eligible for inclusion in the National Register of Historic Places, and has consulted with the California State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, the Port of Oakland participated in the consultation and has been invited to concur in this Memorandum of Agreement;

NOW, THEREFORE, the Navy and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

The Navy and the Port of Oakland will ensure that the following measures are carried out:

1. Prior to the demolition of any of the buildings on the land to be leased to the Port of Oakland (Phases I - III, Exhibit 1), the Navy shall contact the Office of National Register Programs, Western Region, National Park Service (NPS), 600 Harrison Street, Suite 600, San Francisco, California to determine what level and kind of recordation is required for the property. Unless otherwise agreed to by NPS, the Navy shall ensure that all documentation is completed and accepted by the Historic American Buildings Survey, NPS, prior to the demolition, and that copies of this documentation are made available to the SHPO and appropriate local archives designated by the SHPO.
2. By January 1, 1998 the Navy will prepare and initiate implementation of a Historic and Archeological Resources Protection (HARP) Plan in consultation with the SHPO, for those portions of the Naval Supply Center Oakland Historic District that will not be leased to the Port of Oakland and will nominate to the National Register of Historic Places, as required by Section 110(a)(2) of the National Historic Preservation Act, as amended, those remaining portions of the Naval Supply Center Oakland Historic District that appear to qualify.
3. The Navy, through FISC Oakland Public Affairs Officer, will allow for guided tours of the Naval Supply Center Oakland Historic District for interested community groups upon request on such terms and conditions as the Commanding Officer of FISC Oakland determines are compatible with the security and operation of the facility.

MEMORANDUM OF AGREEMENT /

Naval Supply Center Oakland Historic District

Navy Lease to Port of Oakland

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4. The Port of Oakland will publicize tours of the Naval Supply Center Oakland Historic District and arrange for trained docents to lead the tours.

5. The Port of Oakland will phase demolition of the historic buildings on the property it leases from the Navy at FISC Oakland. Buildings will be demolished only after HABS recordation is complete and an approved sublease for use of the land occupied by the building(s) requires its (their) removal.

6. The Navy will provide the Pacific Locomotive Association, Inc., a non-profit corporation, railroad track for use on the Niles Canyon Railway, a historical railroad museum from the rail car marshaling yard of Naval Supply Center Oakland Historic District.

7. The Port of Oakland agrees to carry out the obligations set forth in its letter of July 11, 1994 to the Oakland Landmarks Preservation Advisory Board attached hereto as Exhibit 2. The Navy will make a vigorous effort to obtain Legacy or other funding in Fiscal Year 1995 pursuant to the Department of Defense Appropriations Act of 1991 (PL 101-511) et seq. to assist the Port with the obligations assumed by the Port in Exhibit 2. Except for the aforementioned effort to obtain funding, the Navy assumes no obligations or responsibilities with respect to the provisions of Exhibit 2.

8. Should the SHPO object within 30 days to any proposals of the HARP Plan for FISC Oakland prepared pursuant to this Memorandum of Agreement, the Navy shall consult with the SHPO to resolve the objection. If the Navy determines that the objection cannot be resolved, the Navy shall request the further comments of the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Section 800.6(b). Any Council comment provided in response to such a request will be taken into account by the Navy in accordance with 36 CFR Section 800.6(c)(2) with reference only to the subject of the dispute; the Navy's responsibility to carry out all actions under this Memorandum of Agreement that are not the subjects of the dispute will remain unchanged.

Execution of this Memorandum of Agreement by the Navy, the Port, and the California SHPO, its subsequent acceptance by the Council, and implementation of its terms, evidence that the Navy has afforded the Council an opportunity to comment on the lease of approximately 220 acres of FISC Oakland to the Port and its effects on historic properties, and that the Navy has taken into account the effects of the undertaking on historic properties.

MEMORANDUM OF AGREEMENT
Naval Supply Center Oakland Historic District
Navy Lease to Port of Oakland
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DEPARTMENT OF THE NAVY

By: J. R. Bailey Date: 8 Nov 94

J. R. Bailey, CAPT, SC, USN

[Name and Title of Signer]

Commanding Officer, Fleet and Industrial Supply Center Oakland

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

By: Cheryl Nidell Date: December 5, 1994

CHERYL NIDELL, CA STATE HISTORIC PRESERVATION OFFICER

[Name and Title of Signer]

Concur:

PORT OF OAKLAND

APPROVED AS TO FORM AND LEGALITY THIS

22nd day of November, 1994

Stanley P. Herbert

Port Attorney

By: C. R. Roberts Date: 11/15/94

Charles R. Roberts, Executive Director

[Name and Title of Signer]

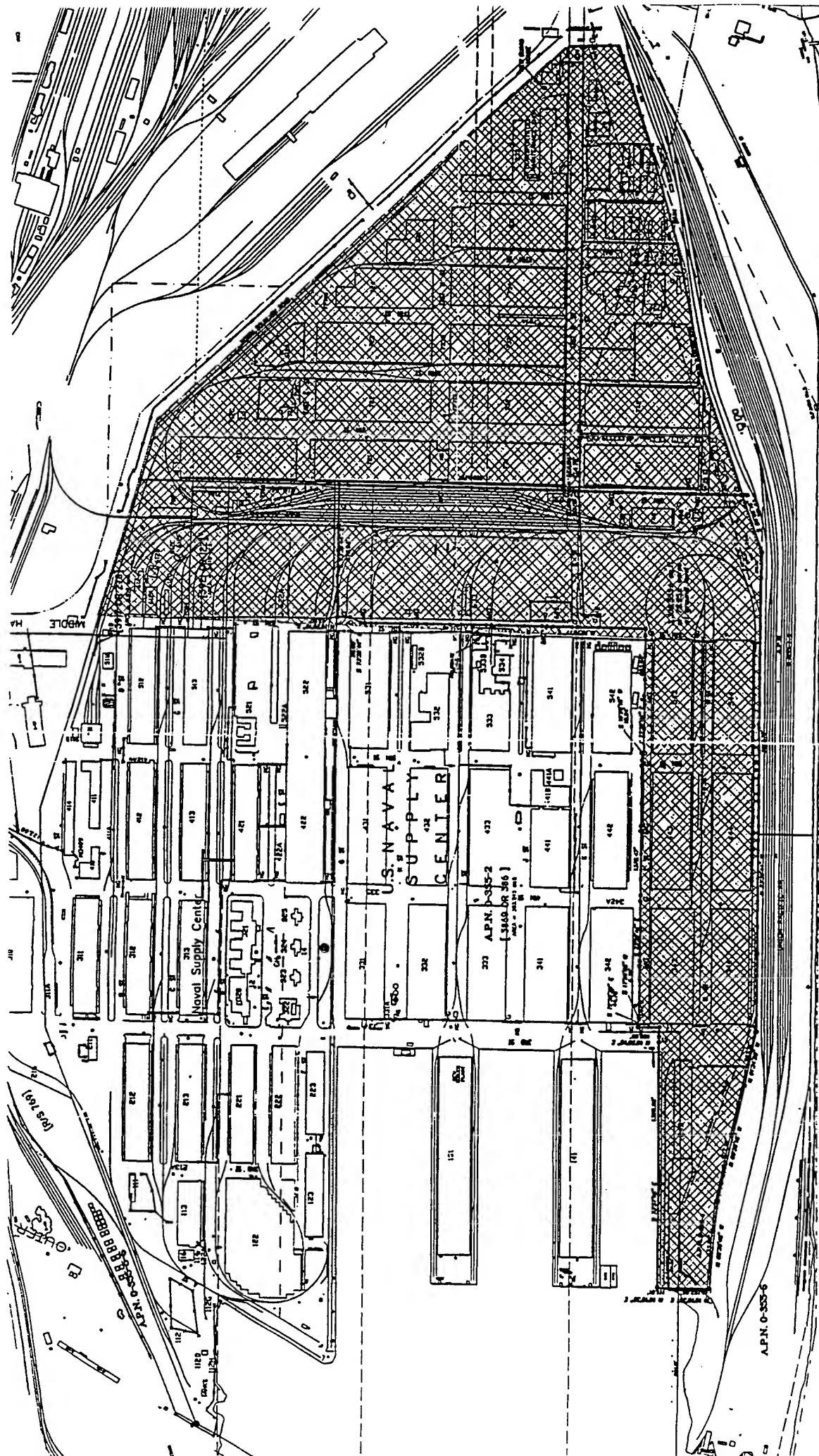
Port Resolution No. 9431

ACCEPTED for the Advisory Council on Historic Preservation

By: Robert D. Beach Date: 12/22/94

[Name and Title of Signer]

Exhibit
1



INNER HARBOR CHANNEL
CITY OF OAKLAND
CITY OF ALAMEDA



APN 0-555-6



PORT OF OAKLAND

July 11, 1994

Mr. Les Hausrath, Chair and Board Members
Oakland Landmarks Preservation Advisory Board
City Hall
One City Hall Plaza
Oakland, CA 94612

RE: Proposed Redevelopment of Naval Supply Center Oakland

Dear Mr. Hausrath and Board Members:

The Port has reviewed the recommendations of the Landmarks Preservation Board outlined in the letter signed by you dated April 27, 1994. After consideration of the options available, and consultation with City staff, the Port agrees to the following program to mitigate impacts to the potential historic district at the Naval Supply Center. As a formality, the Port will require approval from the Board of Port Commissioners prior to its implementation.

1. Provide well publicized tours of the NSCO led by trained docents, in coordination with the Navy on various dates.
2. Phase demolition.
3. Make a vigorous effort to submit a grant application, and to secure funding in the amount of \$150,000 for a Legacy Grant under the Department of Defense. It is estimated that \$50 million is available for grants under this program. Applications are due by August 15, 1994.

The grant application would include:

- o Preparation of high caliber video for national viewing. PBS or documentary quality is desired. This effort would include a search for World War II footage of NSCO.
- o Development of oral histories of NSCO.
- o Development of a monograph in consultation with the Oakland Heritage Alliance, for public dissemination and for use in video.
- o Development of NSCO "exhibits" or story boards in consultation with the Oakland Museum, to be located at Berth 40 (Port View Park under development) and at the Oakland Airport in one of the terminal buildings. Intent is to place exhibit in a location with maximum public exposure. The intent would be to use artifacts from NSCO, if available, in the exhibit.
- o The goal of the Landmarks Board is for video and exhibits, publications, etc. to capture the history of World War II and its tremendous impact on the social, cultural and industrial development of Oakland, and the role Oakland and its Naval facilities played in World War II events.
- o If the grant is not obtained the first year, the Port will resubmit the application the next year.

- o If the Legacy Grant is secured, mitigation Item Number 7 below is dissolved.
 - o The Port will administer the Grant Application, and the Port will work to identify an appropriate grantee to administer the mitigation program, and include funds in the grant application for the costs of administration.
- 4. The Port, Navy and City, during the Section 106 process, will strive to develop this mitigation program for Historic Issues that will cover this lease action and future base closure actions that may lead to JIT and other berth development in NSCO location. This is due to the fact that there is not enough available information on the future uses of the base.
- 5. Reconsider the preservation of the barracks building if the Navy and Port can, as an alternative, preserve in place one or more of the administrative buildings in the Northwest portion of Base, as part of the concept under Item Number 4. The Port will identify buildings in the northwest portion of the site that are suitable for preservation in lieu of the barracks. This area was nominated for preservation by West Oakland citizens that worked at the base during the War. They will be invited to participate in the identification of buildings for preservation. This concept will require Navy concurrence prior to final agreement.
- 6. Defer any Bay Trail or Public Access requirements or discussion until the base closure stage of the NSCO and initiation of the JIT project and environmental review. The Port will consult with Bay Trail advocates at this next juncture.
- 7. If Legacy funds are not granted within two years from the date of this letter, the Port will develop the video and exhibits listed under Item Number 3 above, but with more modest resources funded by Port. The amount of resources would be commensurate with lease and project development, and would not exceed \$55,000 in 1994 dollars, adjusted for inflation according to the Consumer Price Index, beginning one year, and no longer than two years from the date of this agreement.

The Port will determine the appropriate party to contract with a consultant to develop and administer the Mitigation Program. This may be a combination of the City, the Oakland Museum, the Port, and the Navy.
- 9. Record buildings to HABS standards prior to demolition.
 - o Include a description of the spatial and architectural relationships of the buildings that would be utilized in the formal video program discussed under Item Number 3 above.
 - o Select and preserve suitable artifacts for display.
- 10. This agreement is contingent upon the lease of the Naval Supply Center to the Port. If the lease is not consummated, the Port will not implement the above described mitigation program, since there will be no demolition of structures, and therefore no need for mitigation of impacts to the potential Historic District.
- 11. This represents the City's agreement for mitigation under the CEQA\NEPA review of the Naval Supply Center lease to the Port, as well as the NHPA Section 106 consultation.

Mr. Les Hausrath and Board Members
July 11, 1994
Page 3

We look forward to working with the City to preserve this important part of Oakland's heritage. We believe that the creative use of resources will produce a product that will inform Oakland's citizens of the important role that the City played as part of the World War II effort.

Very truly yours,



Loretta Meyer,
Environmental Assessment Supervisor

cc: Helaine Kaplan-Prentice, Secretary



CITY HALL • ONE CITY HALL PLAZA • OAKLAND, CALIFORNIA 94

Landmarks Preservation
Advisory Board

TTY 839-6

July 14, 1994

Loretta Meyer
Environmental Assessment Supervisor
Port of Oakland
530 Water Street
Oakland, California 94604-2064

Dear Ms. Meyer:

At its July 11, 1994 meeting, the Landmark Preservation Advisory Board expressed its concurrence with the mitigation program for demolition at the Oakland Naval Supply Center as outlined in your letter of the same date. A copy of your letter is attached.

For purposes of clarification, under Item 11, the Landmarks Board represents the City only in so far as the Board is empowered to advise on matters related to historic preservation. Also, it is our understanding that under Item 9 a video record of the site of quality useable for the documentary will be made prior to demolition.

Thank you very much for your substantial effort on behalf of this important project, and for your cooperation in seeking an effective and comprehensive mitigation program. Please let us know if a letter of endorsement from the Board would help in support of the Legacy Grant application.

Sincerely,

Helaine Kaplan Thentse
LES HAUSRATH
Chairperson

Attachment
F-M276 1NSCOAK.HKP

FIRST AMENDED MEMORANDUM OF AGREEMENT
AMONG

THE DEPARTMENT OF THE NAVY, THE ADVISORY COUNCIL ON
HISTORIC PRESERVATION, THE CALIFORNIA STATE HISTORIC PRESERVATION
OFFICER, AND THE PORT OF OAKLAND, FOR THE
LEASING AND DISPOSAL OF THE FLEET AND INDUSTRIAL SUPPLY CENTER,
OAKLAND, CALIFORNIA

WHEREAS, the Department of the Navy (Navy) entered into a Memorandum of Agreement (MOA) for the lease of approximately 220 acres of the Fleet and Industrial Supply Center, Oakland (FISCO), California to the Port of Oakland (Port) with the California State Historic Preservation Officer (SHPO), concurred in by the Port and accepted by the Advisory Council on Historic Preservation (Council) on December 22, 1994 in accordance with the regulations for the *Protection of Historic Properties* (36 CFR Part 800), implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f), and

WHEREAS, in 1995 FISCO was included on the list of military bases to be closed pursuant to the Base Realignment and Closure Commission recommendations and is scheduled to cease operations in 1998, thereby precluding the Navy from carrying out Stipulation 2, the preparation of a Historic and Archeological Resources Protection Plan, in the aforesaid MOA, and

WHEREAS, pursuant to the special legislation (10 U.S.C. and the Defense Authorization Act of 1993) under which approximately 200 acres of FISCO have been leased to the Port the remaining acreage is to be leased to the Port, when no longer required by the Navy, and

WHEREAS, title to most of FISCO will revert to the Port, when the Navy has no further need for the property, and the remaining 136 acres is expected to be conveyed to the Port pursuant to special legislation as soon as the Installation Restoration Program is completed (scheduled for 2004), and

WHEREAS, this First Amended Memorandum of Agreement for the leasing and disposal of the FISCO fully supersedes the previous Memorandum of Agreement for the leasing of approximately 220 acres of FISCO to the Port, accepted by the Council on December 22, 1994, and

WHEREAS, the lease of the remaining acreage at FISCO and the future conveyance of FISCO property to the Port will have an effect on the Naval Supply Center Oakland Historic District, a property eligible for inclusion in the National Register of Historic Places, the Navy has consulted with the other parties to the aforesaid MOA pursuant to 36 CFR Section 800.5(e)5;

NOW, THEREFORE, the Navy and the California SHPO, and the Council agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

FIRST AMENDED

MEMORANDUM OF AGREEMENT

**Naval Supply Center Oakland Historic District
Navy Lease and Disposal to the Port of Oakland**

Stipulations

The Navy in cooperation with the Port of Oakland will ensure that the following measures are carried out:

1. The Navy has consulted the Pacific-Great Basin Systems Support Office, National Park Service, San Francisco, California to determine the level and kind of recordation required for the Naval Supply Center Oakland Historic District, the Port has completed this documentation and it has been accepted by the Historic American Buildings Survey.
2. The Navy, through the FISCO Public Affairs Officer and in coordination with the Port, will allow the continuation of guided tours of the Naval Supply Center Historic District for interested community groups upon request on such terms and conditions as the Commanding Officer of FISCO determines are compatible with the security and operation of the facility.
3. The Port will publicize tours of the Naval Supply Center Oakland Historic District and arrange for trained docents to lead the tours.
4. The Port will phase demolition of the historic buildings on the property it leases from the Navy at FISCO. Buildings will be demolished when an approved sublease for use of the land occupied by the building(s) requires its (their) removal.
5. The Navy provided the Pacific Locomotive Association, Inc., a non-profit corporation, railroad track for use on the Niles Canyon Railway, a historical railroad museum from the rail car marshaling yard of the Naval Supply Center Oakland Historic District.
6. The Port of Oakland agrees to carry out the obligations set forth in Resolution No. 96429, attached hereto as APPENDIX A, which expands the agreement set forth in the Port's letter of July 11, 1994 to the Oakland Landmarks Preservation Advisory Board and included as Exhibit 2 of the aforesaid 1994 MOA. The Navy assumes no obligation or responsibilities with respect to the provisions of APPENDIX A.
7. Should any party to this agreement object to any action carried out or proposed by the Navy with respect to the implementation of this agreement, the Navy shall consult with the objecting party to resolve the objection. If, after entering into such consultation, the Navy determines that the objection cannot be resolved through consultation directly with the objecting party, the Navy shall forward all relevant documentation to the Council, including the Navy's proposed response to the objection. The Council shall exercise one of the following options within 30 calendar days of receipt of all pertinent documentation:

FIRST AMENDED

MEMORANDUM OF AGREEMENT

Naval Supply Center Oakland Historic District
Navy Lease and Disposal to the Port of Oakland

(a) advise the Navy in writing that the Council concurs with the Navy's proposed response and final decision, if so indicated, whereupon the Navy shall respond to the objecting party in writing; or


(b) provide the Navy with written recommendations and/or comments, which the Navy shall take into account in reaching its final decision regarding its response to the objection in accordance with 36 CFR 800.6; or

(c) notify the Navy in writing that the Council will provide written comments within a specified time frame pursuant to 36 CFR 800.6. The resulting comments shall be taken into account by the Navy in accordance with 36 CFR 800.6(c).

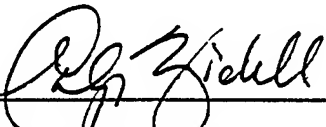
Should the Council fail to exercise one of the above options within 30 calendar days after receipt of all pertinent documentation, the Navy may assume the Council concurrence in the Navy's proposed response. In considering any party's comments, the Navy shall take into account any recommendation or comment with reference only to the subject of the objection. The Navy's responsibility to carry out all actions under this agreement that are not the subject of the objection shall remain unchanged and shall be executed accordingly.

Execution of this First Amended Memorandum of Agreement and implementation of its terms evidence that the Navy has afforded the Council an opportunity to comment on the leasing and disposal and their effects on historic properties, and that the Navy has taken into account the effects of the undertaking on historic properties.

DEPARTMENT OF THE NAVY

By:  Date: 3/7/97
COMMANDING OFFICER, FISC OAKLAND
[Name and Title of Signer]

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

By:  Date: April 11, 1997
[Name and Title of Signer]

FIRST AMENDED
MEMORANDUM OF AGREEMENT
Naval Supply Center Oakland Historic District
Navy Lease and Disposal to the Port of Oakland

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: John M. Swalen Date: 4/30/97
Acting E.C. Dir.
[Name and Title of Signer]

CONCUR:

PORT OF OAKLAND

By: Charles F. Foster Date: 3/14/97
Charles F. Foster, Executive Director
Approved as to legality and form: David Alexander Date 3/17/97
David Alexander
Port Attorney

Resolution No. 96429

P.A. #97-59

FIRST AMENDED
MEMORANDUM OF AGREEMENT
Naval Supply Center Oakland Historic District
Navy Lease and Disposal to the Port of Oakland

APPENDIX

APPENDIX A -- Resolution No. 96429 Board of Port Commissioners, City
of Oakland approved at a regular meeting held December
17, 1996

**BOARD OF PORT COMMISSIONERS
CITY OF OAKLAND**

RESOLUTION NO. 96429

WJW

**RESOLUTION APPROVING AMENDMENT TO MEMORANDUM
OF AGREEMENT TO MITIGATE IMPACTS TO HISTORIC
DISTRICT AT FEDERAL INDUSTRIAL SUPPLY CENTER
OAKLAND (NAVAL SUPPLY CENTER OAKLAND).**

RESOLVED that the Board of Port Commissioners hereby approves an amendment to that certain Memorandum of Agreement among the United States Department of the Navy, the California State Historical Preservation Officer, the Port and the Advisory Council on Historic Preservation, signed on behalf of the Board on November 15, 1994, which amendment modifies and expands the program to mitigate impacts to the historic district at Federal Industrial Supply Center Oakland (Naval Supply Center, Oakland), as said modified and expanded program is described in Board Agenda Sheet Item No. 23 (December 17, 1995), and authorizes the Executive Director for and on behalf of the board to execute any necessary agreements to reflect said amendment; provided, however, that all such agreements shall be approved as to form and legality by the Port Attorney.

At a regular meeting held December 17, 1996

Passed by the following vote:

Ayes: Commissioners Cole, Harris, Kramer, Lockhart, Loh, Taylor and President Ortiz - 7

Noes: None

Absent: None

Board of Port Commissioners - PORT OF OAKLAND

Agenda Sheet

SUBJECT: Amendment of Memorandum of Agreement to Mitigate Impacts to Potential Historic District at FISCO Due to Development of Vision 2000 Program

Date: December 17, 1996

Item No. _____

PROGRAM AREA

- ☐ Airport Operations
☐ Commercial Real Estate
☒ Maritime Operations
☐ Overall Operations

LAB

SUBMITTED BY: Leo R. Brien

EXECUTIVE OFFICE RECOMMENDATION:

FACTUAL BACKGROUND:

On August 9, 1994, the Board of Port Commissioners passed Port Resolution 94314 which approved a Memorandum of Agreement (MOA) between the Port and the City of Oakland Landmarks Preservation Advisory Board to create a program to mitigate the unavoidable, adverse effects to the Naval Supply Center (now referred to as FISCO), which has been identified as an historic district eligible for inclusion on the National Register of Historic Places. This MOA was adopted by the U.S. Navy, the Port of Oakland, the California State Historic Preservation Officer, and the National Advisory Council on Historic Preservation as mitigation for the Port lease of 220 acres of FISCO and the demolition of structures on the FISCO property and fulfilled the review required by Section 106 of the National Historic Preservation Act (NHPA).

Pursuant to the Defense Base Closure and Realignment Act of 1995, FISCO is now scheduled for closure in September, 1998. In order for the Navy to dispose of and convey the FISCO property to the Port, there must be another NHPA, Section 106 review. Therefore the Port and the Navy wish to amend the existing MOA to recognize the disposal and conveyance of the entire FISCO property to the Port and to mitigate the unavoidable, adverse effects of the Port's redevelopment will have on the FISCO historic district.

Port staff and the staff of the City of Oakland Landmarks Preservation Advisory Board (LPAB), which acts as the advisor to the City of Oakland on matters of historic preservation and is the designated agency which acts as the local consultant for purposes of compliance with the NHPA, and in consultation with the Oakland Heritage Alliance, have negotiated and agreed upon the following amendments to the MOA. These amendments have been accepted by the LPAB at their meeting on December 9, 1996.

Port will agree to the following mitigation measures:

- To continue providing public tours of FISCO as long as practicable and safe;
- To continue to phase demolition of structures at FISCO;
- To develop, produce and disseminate a documentary video to preserve the history and significance of FISCO, to be funded by the Port in an amount not to exceed \$200,000. The Port will provide an additional amount, not to exceed \$25,000, to implement a one-time distribution and outreach program that will include the production, packaging and distribution of the video and a professional, good faith effort to pursue television or non-theatrical distribution of the video;

BOARD ACTION REQUIRED:

- ☐ MOTION
☒ RESOLUTION
☐ ORDINANCE
☐ INFORMATION ONLY

BOARD ACTION TAKEN

DATE

SECRETARY OF THE BOARD

Amendment of Memorandum of Agreement - Vision 2000 Program
Page Two. of Board Letter
December 17, 1996

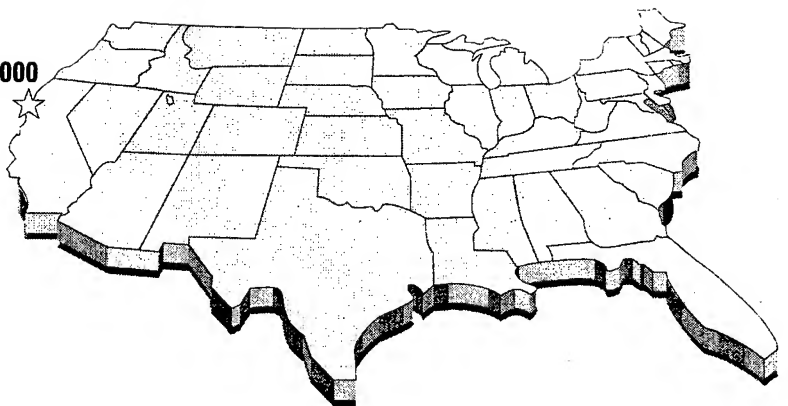
- To provide funding, not to exceed \$55,000, for the preparation of a movable exhibit commemorating FISCO and its place in Oakland history and to provide exhibition space at the Oakland Airport as part of a program in collaboration with the Oakland Museum;
- To include in the design and development of public access areas at the FISCO, a structure, land form or landscaping feature which captures the true scale of the facilities and activities required for the FISCO historic function,
- To prepare and submit an application to the State Historic Resources Commission to designate the FISCO site as a State Historical Point of Interest;
- To make the three officer quarters buildings available for relocation off-site and reuse by non-profit or other community based organizations at no charge for a period not to exceed three months prior to the demolition of the buildings. The Port will provide funding to assist with the relocation up to the amount of the Port Engineer's cost estimate to demolish the buildings. The offer will be widely advertised and made in accordance with conditions, indemnifications, releases and liability insurance to be provided in advance to the Port. The organizations receiving the building(s) are solely responsible, at no cost to the Port, to satisfy all requirements necessary to remove, transport and resite the buildings. If no viable offers that meet the Port's requirements are received within the three months, the Port may demolish the houses.

The LPAB has agreed that the preservation of a building in place at FISCO is not feasible because of critical land use and engineering restrictions. LPAB has further agreed that this mitigation program constitutes the complete and final mitigation for the unavoidable, adverse effects on the historic district through the development of the Vision 2000 Program or other redevelopment by the Port.

RECOMMENDATION:

It is recommended that the Board authorize the Executive Director to execute the above amendments to the Memorandum Of Agreement and enter into any other necessary agreements with the City of Oakland and the U.S. Navy or other parties to adopt and implement the Landmarks Preservation Advisory Board plan for a program to mitigate impacts to the potential historic district at FISCO as a result of Port redevelopment.

FISCO/Vision 2000



APPENDIX H BIOLOGICAL RESOURCES

SPECIES STATUS NEAR THE PROJECT SITE
LETTERS AND REPLIES CONCERNING BIOLOGICAL RESOURCES

H-1

1. LETTER DATED 2/7/94 FROM NATIONAL MARINE FISHERIES SERVICE TO US NAVY
comment on NOP of 1994 FISCO Leasing EIR/EIS
 2. LETTER DATED 5/10/96 FROM US NAVY TO NATIONAL MARINE FISHERIES SERVICE
request for endangered species list
 3. LETTER DATED 6/6/96 FROM NATIONAL MARINE FISHERIES SERVICE TO US NAVY
response to request for endangered species list
 4. LETTER DATED 5/10/96 FROM US NAVY TO US FISH AND WILDLIFE SERVICE
request for endangered species list
 5. LETTER DATED 6/27/96 FROM US FISH AND WILDLIFE SERVICE TO US NAVY
response to request for endangered species list
 6. LETTER DATED 3/6/97 FROM US NAVY TO NATIONAL MARINE FISHERIES SERVICE
request for concurrence of no adverse effect
 7. LETTER DATED 4/23/97 FROM NATIONAL MARINE FISHERIES SERVICE TO US NAVY
response to request for concurrence
 8. LETTER DATED 3/6/97 FROM US NAVY TO US FISH AND WILDLIFE SERVICE
request for concurrence of no adverse effect
 9. LETTER DATED 4/24/97 FROM US FISH AND WILDLIFE SERVICE TO US NAVY
response to request for concurrence
 10. LETTER DATED 4/28/97 FROM US NAVY TO US FISH AND WILDLIFE SERVICE
request for initiation of Endangered Species Act Section 7 consultation
 11. LETTER DATED 6/26/97 FROM US FISH AND WILDLIFE SERVICE TO US NAVY
response to request for initiation of Endangered Species Act Section 7 consultation
 12. LETTER DATED 5/5/97 FROM LEORA FEENEY TO PORT OF OAKLAND
status of burrowing owl habitat at Middle Harbor Park
 13. LETTER DATED 5/12/97 FROM ENTRIX TO PORT OF OAKLAND
status of eelgrass in Oakland Inner and Middle Harbors
-
-

Appendix H

Biological Resources

The table below shows federal and state species of concern observed in the general area of the FISCO/Vision 2000 project site. The table also lists threatened and endangered species and those species proposed for listing as threatened or endangered. However, it is unlikely that any threatened and endangered species are present at the project site.

Table H-1
Species Status Near the Project Site

Common Name Scientific Name	Federal Status	State Status	CNPS Status
<u>Plants</u>			
Alkali milk-vetch Astragalus tener var. tener	--	SCSC	1B
Kellogg's wedge-leaved horkelia Horkelia cuneata ssp. sericea	FSC	--	1B
Point Reyes (Northcoast) birds beak Cordylanthus maritimus ssp. palustris	FSC	--	1B
Adobe sanicle Sanicula maritima	FSC	SR	1B
San Francisco Bay spineflower Chorizanthe cuspidata var. cuspidata	FC	--	1B
Santa Cruz tarplant Holocarpha macradenia	FC	SE	1B
<u>Invertebrates</u>			
San Francisco lacewing Nothochrysa californica	FSC	--	--
Bridges' coast range shoulderband snail Helminthoglypta nickliniana	FSC	--	--
Ricksecker's water scavenger beetle Hydrochara rickseckeri	FSC	--	--
<u>Fish</u>			
Green sturgeon Acipenser medirostris	FSC	--	--
Longfin smelt Spirinchus thaleichthys	FSC	SCSC	--
Coho salmon Oncorhynchus kisutch	FPT	SSCT	--
Delta smelt Hypomesus transpacificus	FT	ST	--

Common Name Scientific Name	Federal Status	State Status	CNPS Status
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	FPT	-	-
Tidewater goby <i>Eucyclogobius newberryi</i>	FE	SCSC	-
<u>Amphibians</u>			
Foothill yellow-legged frog <i>Rana boylei</i>	FSC	SCSC	-
California red-legged frog <i>Rana aurora draytonii</i>	FT	SCSC	-
California tiger salamander <i>Ambystoma californiense</i>	FC	SCSC	-
<u>Reptiles</u>			
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FPE	ST	-
California horned lizard <i>Phrynosoma coronatum frontale</i>	FSC	SCSC	-
Northwestern pond turtle <i>Clemmys marmorata m.</i>	FSC	SCSC	-
Southwestern pond turtle <i>Clemmys marmorata p.</i>	FSC	SCSC	-
<u>Birds</u>			
Double crested cormorant <i>Phalacrocorax auritus</i>	-	SCSC	-
California clapper rail <i>Rallus longirostris obsoletus</i>	FE	SE	-
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT	SE	-
California black rail <i>Laterallus jamaicensis coturniculus</i>	FSC	ST	-
Alameda song sparrow <i>Melospiza melodia maxillaris</i>	FSC	SCSC	-
Bell's sage sparrow <i>Amphispiza belli b.</i>	FSC	SCSC	-
Bald eagle <i>Haliaeetus leucocephalus</i>	FT	SE	-
Ferruginous hawk <i>Buteo regalis</i>	FSC	-	-
Burrowing owl <i>Speotytoaunicularia</i>	-	SCSC	-
Little willow flycatcher <i>Empidonax taillii brewsteri</i>	FSC	-	-
Saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	FSC	SCSC	-
Tricolored blackbird <i>Agelaius tricolor</i>	FSC	SCSC	-

Common Name Scientific Name	Federal Status	State Status	CNPS Status
<u>Mammals</u>			
Salt marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE	SE	-
Salt marsh wandering shrew <i>Sorex vagrans halicoetes</i>	FC	SCSC	-
Alameda Island mole <i>Scapanus latimanus parvus</i>	FSC	SCSC	-
Berkeley kangaroo rat <i>Diptodomys heermanni</i> <i>berkeleyensis</i>	FSC	-	-
Fringed myotis bat <i>Myotis thysanodes</i>	FSC	-	-
Greater western mastiff bat <i>Eumops perotis californicus</i>	FSC	SCSC	-
Long-eared myotis bat <i>Myotis evotis</i>	FSC	-	-
Long-legged myotis bat <i>Myotis volans</i>	FSC	-	-
Pacific western big-eared bat <i>Plecotus townsendii townsendii</i>	FSC	-	-
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	FSC	SCSC	-
Yuma myotis bat <i>Myotis yumanensis</i>	FSC	-	-

Source: California Department of Fish and Game 1995; Skinner and Pavlik 1994; US Fish and Wildlife Service 1996

<u>Federal Status</u>		<u>State Status</u>		<u>California Native Plant Society</u> <u>(CNPS) Status</u>
FE	= Endangered	SE	= Endangered	List 1A = Presumed extinct in California
FT	= Threatened	ST	= Threatened	
FC	= Candidate (formerly C1)	SR	= Rare	List 1B = Rare and endangered in California and elsewhere
FPE	= Proposed endangered	SCSC	= California species of special concern	
FPT	= Proposed threatened	CEQA	= Protected under CEQA	List 3 = Need more information - a review list
FSC	= Species of concern (formerly C2)	SSCT	= Candidate for listing as threatened	
FSCR	= Species of concern recommended listing			List 4 = Limited distribution - a watch list

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region
Habitat Conservation Division
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404

February 7, 1994

F/SW022:DBM

Mr. Raymond Chiang
Environmental Engineer
Environmental Planning Branch
Western Division Naval Facilities Engineering Command
P.O. Box 727
San Bruno, California 94066

Dear Mr. Chiang:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of an Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Commercial Uses of a Portion of Naval Supply Center Oakland. The following comments are meant to assist you in the completion of the EIR/EIS.

The National Marine Fisheries Service is responsible for preserving and enhancing marine, estuarine, and anadromous fish resources and the habitats that support these resources. The EIR/EIS should fully address any impacts associated with these resources.

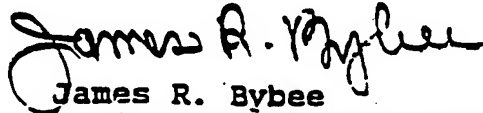
We recommend that the EIR/EIS fully describe all dredge and fill activities, documenting the volumes of material and the size of particular areas to be modified or impacted. The requirements of a long-term future maintenance dredging and disposal plan must be addressed in addition to new dredging proposed for the redevelopment project. Upland disposal of dredged material is preferred.

Upland activities planned for redeveloping the port facilities should be described, especially those that contribute to water quality problems of the bay. For example, a stormwater management plan should be described indicating runoff management with oil and grease traps before entry into the bay, or to a sewer system if appropriate.

If any redevelopment activities require fill in water areas or requires shore realignments, rip-rap, or bulkheads, these items will also need justification and an alternatives analysis.

If you have questions concerning these comments or wish to discuss the project further, please contact Mr. Dante Maragni of my staff at: National Marine Fisheries Service, Southwest Region, Habitat Conservation Division, 777 Sonoma Avenue, Room 325, Santa Rosa, California 95404; telephone 707-578-7513.

Sincerely,

A handwritten signature in dark ink, appearing to read "James R. Bybee". The signature is fluid and cursive, with the first name "James" being more prominent.

James R. Bybee
Environmental Coordinator
Northern Area

cc: Port of Oakland, C. Schwarz



DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1B
185NR/EP-970
10 May 1996

Mr. James Bybee
National Marine Fisheries Service
777 Sonoma Ave. Rm 325
Santa Rosa, CA 95404

Dear Mr. Bybee:

We request a list of federally listed threatened and endangered species potentially occurring at the Naval and Fleet Industrial Supply Center, Oakland (FISCO), California. FISCO has been identified for closure pursuant to the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510).

Current schedule for operational closure in September 1998. The Port of Oakland will generate a reuse plan identifying the future land use of the facility. Reuse is expected to focus on the development of a joint intermodal terminal, expansion of marine freight handling terminals, development of a public access, and habitat mitigation areas. The anticipated issues of concern regarding the reuse by the Port of Oakland include: transportation, circulation, and traffic impacts including railroad, truck and automobile; geologic and hydrologic conditions affecting reuse; cultural resources; air quality; hazardous materials and hazardous waste; and cumulative effects of waterfront activities.

FISCO is located on approximately 541 acres on the eastern side of San Francisco Bay, south of the San Francisco-Oakland Bay Bridge, within the City of Oakland. The facility consist of four types of operations: general supply operations, waterfront operations, administration, and miscellaneous tenant operations. In 1995, the Port of Oakland began a 50 year lease of 220 acres of FISCO to support their intermodal rail facilities and maritime-cargo related uses.

Please provide the species list within 30 days of receipt of this letter. If you have other environmental concerns which may affect the closure or reuse of the facility, we would appreciate receiving those concerns at this time.

For additional information our point-of-contact is Mr. Gary Munekawa, Attention: Code 185GM (telephone 415-244-3022), at the letterhead address.

Sincerely,

Douglas R. Pomeroy
Douglas R. Pomeroy

Biology/Base Closure Section

Encls.

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**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE**

**Southwest Region
777 Sonoma Ave. Rm 325
Santa Rosa, CA 95404**

June 6, 1996 F/SW031:PR

Mr. Douglas R. Pomeroy
Biology/Base Closure Section
Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006

Dear Mr. Pomeroy:

This letter is in response to your request of May 10, 1996 regarding the presence of Federally listed threatened or endangered species or critical habitat that may be affected by the proposed closure and reuse of the Naval and Fleet Industrial Supply Center (FISCO) in Oakland, California.


Available information indicates that the Federally listed endangered Sacramento River winter-run chinook salmon may occur at the project site. No critical habitat occurs at the proposed project site. No other listed species under the jurisdiction of the National Marine Fisheries Service occur in the project area. Your letter also requested identification of other environmental concerns which may affect the closure or reuse of the base facility. My letter of February 7, 1994 to Mr. Raymond Chiang regarding the Notice of Preparation identified environmental concerns with maintenance dredging and disposal, in-water fill or rip-rap placement, and water quality impacts from stormwater runoff. I have attached a copy of this letter for your reference.

The U.S. Fish and Wildlife Service (USFWS) may have listed species or critical habitat under its jurisdiction in the project area. Please contact Mr. Joel Medlin, Field Supervisor, USFWS, at 2800 Cottage Way, Room E-1803, Sacramento, California 95925, or (916) 979-2710, regarding the presence of listed species or critical habitat under USFWS jurisdiction that may be affected by your project.

My staff is available to review the EIR/EIS when it becomes available. If you have questions concerning these comments, please contact Ms. Penny Ruvelas of my staff at (707) 575-6062.



Sincerely,


James R. Bybee
Environmental Coordinator
Northern Area

cc: Craig Wingert, NMFS
Deborah McKee, DFG



DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1B
185NR/EP-969
10 May 1996

Mr. Joel Medlin
U.S. Fish and Wildlife Service
Sacramento Field Office
2800 Cottage Way, Room E-1803
Sacramento, CA 95825-1846

Dear Mr. Medlin:

We request a list of federally listed threatened and endangered species potentially occurring at Fleet and Industrial Supply Center Oakland, (FISCO) California. FISCO has been identified for closure pursuant to the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510).

Current schedule for operational closure is September 1998. The Port of Oakland will generate a reuse plan identifying the future land use of the facility. Reuse is expected to focus on the development of a joint intermodal terminal, expansion of marine freight handling terminals, development of a public access, and habitat mitigation areas.

The facility is located on the eastern shore of San Francisco Bay, just south of the San Francisco-Oakland Bay Bridge and adjacent to the Port of Oakland. The facility is intensely developed and was constructed in 1940 on 541 acres of former marsh and submerged tideland. The facility is divided into six land use areas: administration/personnel support area, central supply area, waterfront area, residential area, tenant area, and Port of Oakland leased area (a map of the facility is enclosed).

Please provide this list within 30 days of receipt of this letter. If you have other concerns which may affect the closure or reuse of this facility pursuant to the Base Realignment and Closure process, we would appreciate receiving those concerns at this time.

For additional information our point-of-contact is Mr. Gary Munekawa,
Attention: Code 185GM (telephone 415-244-3022), at the letterhead address.

Sincerely,

Douglas R. Pomeroy
Douglas R. Pomeroy

Biology/Base Closure Section

Encls.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services

Sacramento Field Office

2800 Cottage Way, Room E-1803

Sacramento, California 95825

IN REPLY REFER TO:

1-1-96-SP-986

June 27, 1996

Mr. Douglas R. Pomeroy, Biology/Base Closure Section
Attn: Mr. Gary Munekawa, Code 185GM
Department of the Navy, Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006

Subject: Species Lists for the Fleet and Industrial Supply Center
Oakland, Alameda County, California

Dear Mr. Pomeroy:

As requested by letter from your agency dated May 10, 1996, you will find enclosed lists of sensitive species that may be present in or *may be affected* by projects in the subject project area (see Enclosures A and B). These lists fulfill the requirement of the Fish and Wildlife Service (Service) to provide species lists pursuant to section 7(c) of the Endangered Species Act of 1973, as amended (Act).

The Service used your map(s) and/or other information to locate the proposed project on an U.S. Geological Survey (USGS) 7.5 minute quadrangle map(s)(Quads). The animal species listed in Enclosure A are those species we believe may occur within, or *be affected by projects within*, the USGS Quad 466D, where your project is planned.

The plants listed in Enclosure A are those *that have actually been observed* in the project Quad(s). Enclosure B is a list of sensitive plants that have been observed in *surrounding Quads*. These plants may also occur in the Quad(s) where your project is planned.

Some of the species listed in Enclosures A and B may not be affected by the proposed action. A trained biologist or botanist, familiar with the habitat requirements of the listed species, should determine whether these species or habitats suitable for these species may be affected by the proposed action.

Some pertinent information concerning the distribution, life history, habitat requirements, and published references for the listed species is available upon request. This information may be helpful in preparing the biological assessment for this project, if one is required. Please see Enclosure C for a discussion of the responsibilities Federal agencies have under section 7(c) of the Act and the conditions under which a biological assessment must be prepared by the lead Federal agency or its designated non-Federal representative.

Formal consultation, pursuant to 50 CFR § 402.14, should be initiated if you determine that a listed species may be affected by the proposed project. If you determine that a proposed species may be adversely affected, you should consider requesting a conference with our office pursuant to 50 CFR § 402.10. Informal consultation may be utilized prior to a written request for formal

Mr. Douglas R. Pomeroy

2

consultation to exchange information and resolve conflicts with respect to a listed species. If a biological assessment is required, and it is not initiated within 90 days of your receipt of this letter, you should informally verify the accuracy of this list with our office.

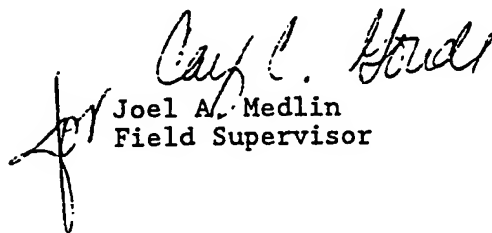
Candidate species are currently being reviewed by the Service and are under consideration for possible listing as endangered or threatened. Candidate species have no protection under the Endangered Species Act, but are included for your consideration as it is possible that one or more of these candidates could be proposed and listed before the subject project is completed. Should the biological assessment reveal that candidate species may be adversely affected, you may wish to contact our office for technical assistance. One of the potential benefits from such technical assistance is that by exploring alternatives early in the planning process, it may be possible to avoid conflicts that could otherwise develop, should a candidate species become listed before the project is completed.

The Service recently changed its policy on candidate species. The term *candidate* now strictly refers to species for which the Service has on file enough information to propose listing as endangered or threatened. Former *candidate category 2* species - species for which listing is possibly appropriate but for which the Service lacks sufficient information to support a listing proposal - are now called *species of concern*. They are no longer monitored by the Service. However we have retained them on the enclosed list for general information. We encourage consideration of them in project planning, as they may become candidate species in the future.

If the proposed project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by the U.S. Army Corps of Engineers (Corps), a Corps permit shall be required, pursuant to section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act. Impacts to wetland habitats require site specific mitigation and monitoring. You may request a copy of the Service's General Mitigation and Monitoring Guidelines or submit a detailed description of the proposed impacts for specific comments and recommendations.

Please contact Mr. Michael Thabault at (916) 979-2725 if you have any questions regarding the attached list or your responsibilities under the Endangered Species Act. For the fastest response to species list requests, address them to the attention of the section 7 office assistant at this address. If you have any questions regarding wetlands, contact Mr. Mark Littlefield at (916) 979-2113.

Sincerely,


Joel A. Medlin
Field Supervisor

Enclosures

Federally Listed and Other Sensitive Species that May Occur in or be Affected
by Projects in the Area of the Following Selected Quads

File Reference 1-1-96-SP-986
June 12, 1996

466D OAKLAND WEST

LISTED SPECIES

Mammals

salt marsh harvest mouse, *Reithrodontomys raviventris*(E)

Birds

American peregrine falcon, *Falco peregrinus anatum*(E)
California brown pelican, *Pelecanus occidentalis californicus*(E)
California clapper rail, *Rallus longirostris obsoletus*(E)
California least tern, *Sterna antillarum (-albifrons) browni*(E)
bald eagle, *Haliaeetus leucocephalus*(T)
western snowy plover, *Charadrius alexandrinus nivosus*(T)

Amphibians

California red-legged frog, *Rana aurora draytonii*(T)

Fish

delta smelt, *Hypomesus transpacificus*(T)
tidewater goby, *Eucyclogobius newberryi*(E)
winter-run chinook salmon, *Oncorhynchus tshawytscha*(E)
winter-run chinook salmon crit. habitat, *Oncorhynchus tshawytscha*(E)

PROPOSED SPECIES

Reptiles

Alameda whipsnake, *Masticophis lateralis euryxanthus*(PE)

Fish

Coho salmon, *Oncorhynchus kisutch*(PT)
Sacramento splittail, *Pogonichthys macrolepidotus*(PT)

CANDIDATE SPECIES

Amphibians

California tiger salamander, *Ambystoma californiense*(C)

Plants

Santa Cruz tarweed, *Holocarpha macradenia*(C)

SPECIES OF CONCERN

Mammals

Alameda Island mole, *Scapanus latimanus parvus*(SC)
Berkeley kangaroo rat, *Dipodomys heermanni berkleyensis*(SC)
Pacific western big-eared bat, *Plecotus townsendii townsendii*(SC)
San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens*(SC)
Yuma myotis bat, *Myotis yumanensis*(SC)
fringed myotis bat, *Myotis thysanodes*(SC)

Federally Listed and Other Sensitive Species that May Occur in or be Affected
by Projects in the Area of the Following Selected Quads

File Reference 1-1-96-SP-986
June 12, 1996

Mammals, continued

greater western mastiff-bat, *Eumops perotis californicus*(SC)
long-eared myotis bat, *Myotis evotis*(SC)
long-legged myotis bat, *Myotis volans*(SC)
salt marsh vagrant shrew, *Sorex vagrans halicoetes*(SC)

Birds

Alameda (South Bay) song sparrow, *Melospiza melodia maxillaris*(SC)
Bell's sage sparrow, *Amphispiza belli belli*(SC)
black rail, *Laterallus jamaicensis*(SC)
ferruginous hawk, *Buteo regalis*(SC)
little willow flycatcher, *Empidonax traillii brewsteri*(SC)
saltmarsh common yellowthroat, *Geothlypis trichas sinuosa*(SC)
tricolored blackbird, *Agelaius tricolor*(SC)

Reptiles

California horned lizard, *Phrynosoma coronatum frontale*(SC)
northwestern pond turtle, *Clemmys marmorata marmorata*(SC)
southwestern pond turtle, *Clemmys marmorata pallida*(SC)

Amphibians

foothill yellow-legged frog, *Rana boylei*(SC)

Invertebrates

Bridges' Coast Range shoulderband snail, *Helminthoglypta nickliniana bridgesi*(SC)
Ricksecker's water scavenger beetle, *Hydrochara rickseckeri*(SC)
San Francisco lacewing, *Nothochrysa californica*(SC)

Plants

Kellogg's (wedge-leaved) horkelia, *Horkelia cuneata ssp. sericea*(SC)
San Francisco Bay spineflower, *Chorizanthe cuspidata var. cuspidata*(SC)
adobe sanicle, *Sanicula maritima*(SC)
alkali milk-vetch, *Astragalus tener var. tener*(SC)
northcoast bird's-beak, *Cordylanthus maritimus ssp. palustris*(SC)

- | | |
|--|---|
| (E)--Endangered | Species that is in danger of extinction throughout all or a significant portion of its range |
| (T)--Threatened | Species that is likely to become endangered within the foreseeable future |
| (P)--Proposed | Species that has been proposed in the <i>Federal Register</i> to be listed as endangered or threatened |
| (CH)--Critical Habitat | Area essential to the conservation of a species |
| (C)--Candidate: | Species for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened |
| (SC)--Species of Concern: | Species for which existing information indicated may warrant listing, but for which substantial biological information to support a proposed rule is lacking. |
| (CR)--Recommended for Candidate Status | |
| ()--Listing petitioned. | |

Sensitive Plant Species That May Occur in the Quads Surrounding
Quad 466D, California

File Reference 1-1-96-SP-986
June 12, 1996

LISTED SPECIES

California sea blite, *Suaeda californica*(E)
Marin dwarf-flax, *Hesperolinon congestum*(T)
Presidio clarkia, *Clarkia franciscana*(E)
Presidio manzanita, *Arctostaphylos hookeri* ssp. *ravenii*(E)
Presidio manzanita, *Arctostaphylos hookeri* ssp. *ravenii*(E)
Tiburon jewelflower, *Streptanthus niger*(E)
Tiburon mariposa lily, *Calochortus tiburonensis*(T)
Tiburon paintbrush, *Castilleja affinis* ssp. *neglecta*(E)
beach layia, *Layia carnosae*(E)
marsh sandwort, *Arenaria paludicola*(E)
robust spineflower, *Chorizanthe robusta*(E)
white-rayed pentachaeta, *Pentachaeta bellidiflora*(E)

PROPOSED SPECIES

San Bruno Mountain manzanita, *Arctostaphylos imbricata*(PT)
San Francisco lessingia, *Lessingia germanorum*(PE)
pallid manzanita (Alameda manzanita), *Arctostaphylos pallida*(PT)
showy Indian clover, *Trifolium amoenum*(PE)

CANDIDATE SPECIES

Santa Cruz tarweed, *Holocarpha macradenia*(C)

SPECIES OF CONCERN

Diablo rock-rose, *Helianthella castanea*(SC)
Kellogg's (wedge-leaved) horkelia, *Horkelia cuneata* ssp. *sericea*(SC)
Marin checkermallow, *Sidalcea hickmanii* ssp. *viridis*(SC)
Mission Delores campion, *Silene verecunda* ssp. *verecunda*(SC)
Montara manzanita, *Arctostaphylos montaraensis*(SC)
San Francisco Bay spineflower, *Chorizanthe cuspidata* var. *cuspidata*(SC)
San Francisco gumplant, *Grindelia hirsutula* var. *maritima*(SC)
San Francisco manzanita, *Arctostaphylos hookeri* ssp. *franciscana*(SC)
San Francisco owl's-clover, *Triphysaria floribunda*(SC)
San Francisco popcornflower, *Plagiobothrys diffusus*(SC)
Tiburon tarweed, *Hemizonia multicaulis* ssp. *vernalis*(SC)
adobe sanicle, *Sanicula maritima*(SC)
alkali milk-vetch, *Astragalus tener* var. *tener*(SC)
compact cobweb thistle, *Cirsium occidentale* var. *compactum*(SC)
delta tule-pea, *Lathyrus jepsonii* var. *jepsonii*(SC)
fragrant fritillary, *Fritillaria liliacea*(SC)
most beautiful (uncommon) jewelflower, *Streptanthus albidus* ssp. *peramoenus*(SC)
northcoast bird's-beak, *Cordylanthus maritimus* ssp. *palustris*(SC)
pappose spikeweed, *Hemizonia parryi* ssp. *congdonii*(SC)

Enclosure B

2

Sensitive Plant Species That May Occur in the Quads Surrounding
Quad 466D, California

File Reference 1-1-96-SP-986
June 12, 1996

- | | |
|--|---|
| (E)--Endangered | Species that is in danger of extinction throughout all or a significant portion of its range |
| (T)--Threatened | Species that is likely to become endangered within the foreseeable future |
| (P)--Proposed | Species that has been proposed in the <i>Federal Register</i> to be listed as endangered or threatened |
| (CH)--Critical Habitat | Area essential to the conservation of a species |
| (C)--Candidate: | Species for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened |
| (SC)--Species of Concern: | Species for which existing information indicated may warrant listing, but for which substantial biological information to support a proposed rule is lacking. |
| (CR)--Recommended for Candidate Status | |
| ()--Listing petitioned. | |

Enclosure C

FEDERAL AGENCIES' RESPONSIBILITIES UNDER SECTIONS 7(a) and (c) OF THE ENDANGERED SPECIES ACT

SECTION 7(a) Consultation/Conference

Requires: (1) federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species; (2) Consultation with FWS when a federal action may affect a listed endangered or threatened species to insure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The process is initiated by the federal agency after determining the action may affect a listed species; and (3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat.

SECTION 7(c) Biological Assessment-Major Construction Activity¹

Requires federal agencies or their designees to prepare a Biological Assessment (BA) for major construction activities. The BA analyzes the effects of the action² on listed and proposed species. The process begins with a Federal agency requesting from FWS a list of proposed and listed threatened and endangered species. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the list, the accuracy of the species list should be informally verified with our Service. No irreversible commitments of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may proceed; however, no construction may begin.

We recommend the following for inclusion in the BA: an on-site inspection of the area affected by the proposal which may include a detailed survey of the area to determine if the species or suitable habitat are present; a review of literature and scientific data to determine species' distribution, habitat needs, and other biological requirement; interviews with experts, including those within FWS, State conservation departments, universities and others who may have data not yet published in scientific literature; an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of indirect effects of the proposal on the species and its habitat; an analysis of alternative actions considered. The BA should document the results, including a discussion of study methods used, and problems encountered, and other relevant information. The BA should conclude whether or not a listed or proposed species will be affected. Upon completion, the BA should be forwarded to our office.

¹A construction project (or other undertaking having similar physical impacts) which is a major federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332(2)C).

²"Effects of the action" refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action.

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5090.1B
1852/EP7-1234
6 March 1997

Mr. James Bybee
National Marine Fisheries Service
777 Sonoma Ave, Room 325
Santa Rosa, CA 95404

Dear Mr. Bybee:

We are currently distributing the joint Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) for the Disposal and Reuse of the Navy Fleet and Industrial Supply Center, Oakland (FISCO), California for your review and comment. We have enclosed an additional copy of the EIS document for your review to meet the interagency consultation requirements of the Endangered Species Act, Section 7. This is a joint EIS/EIR document supporting the Navy property disposal and subsequent Port of Oakland reuse of FISCO. Pursuant to the Defense Base Closure and Realignment Act of 1990, Public Law 101-510 Title XXIX, and the specific base closure decisions approved by Congress in September 1995, the Navy Fleet and Industrial Supply Center is scheduled for closure in September 1998.

FISCO is a heavily urbanized industrial port area. The presence and status of endangered and threatened species on and adjacent to FISCO is described in Chapter 3 of the EIS/EIR, the Environmental Consequences of the Navy action of the FISCO property disposal is described in Chapter 4, and the Environmental Consequences of Port of Oakland reuse are described in Chapter 5. To expedite this consultation, we request consultation only on the Navy Disposal alternative, and the Port of Oakland Reduced Harbor Fill reuse alternative at this time.

We request your written concurrence with our determination provided the mitigation measures as identified in the draft EIS/EIR are implemented as described that the Navy property disposal and subsequent community reuse of FISCO will have no adverse affect on any federally threatened or endangered species under your cognizance. As noted in the draft EIS/EIR, site specific Port dredging and in-water construction activities may require further coordination with your office and the Army Corps of Engineers.

We request you respond by April 22, 1997, so that your concurrence is received by the end of the draft EIS/EIR comment period. Thank you for your assistance on this Navy project. For additional information on the Draft EIS/EIR our point of contact is: Mr. Gary Munekawa at the address shown above, telephone 415-244-3022. I may be reached at 415-244-3008 regarding the Endangered Species Act, Section 7, consultation.

Sincerely,

Douglas R. Pomeroy
Group Leader, Base Conversion/Biology Section
Environmental Planning Branch

copy to: Port of Oakland (Loretta Meyer)

Enclosure



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213
TEL (310) 980-4000; FAX (310) 980-4018

APR 23 1997

Mr. Douglas R. Pomeroy
Group Leader, Base Conversion/Biology Section
Environmental Planning Branch
Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-2402

Dear Mr. Pomeroy:

Thank you for your March 6, 1997, letter requesting concurrence with your determination that Navy disposal and subsequent Port of Oakland reuse of the Navy Fleet and Industrial Supply Center, Oakland will have no adverse effect on any federally threatened or endangered species under National Marine Fisheries Service jurisdiction. At this time, your letter only requests consultation on two alternatives described in the current Draft Environmental Impact Statement for the project: The Navy Disposal Alternative, and the Port of Oakland Reduced Harbor Fill Alternative.

Based on the project description and measures which have been incorporated to protect aquatic resources, I concur with your determination that the winter-run chinook salmon, the proposed-endangered Central Valley steelhead, and the proposed-endangered Central Coast steelhead are not likely to be adversely affected by either the Navy Disposal or Reduced Harbor Fill alternatives.

This concludes section 7 consultation for the endangered winter-run chinook salmon, and conferencing for the proposed-endangered Central Valley and Central Coast steelhead evolutionarily significant units. Although conferencing for steelhead does not take the place of a section 7 consultation, no further consultation should be necessary in the event of a steelhead listing, provided that the project is implemented as described in the March 1997 Draft Environmental Impact Statement. Should project plans change, or if additional information on the proposed species becomes available, this determination may be reconsidered.



If you have any questions please contact Mr. Chris Mobley of my staff at (707) 575-6056; e-mail Chris.Mobley@noaa.gov.

Sincerely,



William T. Hogarth, Ph.D.
Acting Regional Administrator

cc: J. Medlin, FWS
J. Turner, DFG
C. Morris, EPA

5090.1B
1852/EP7-1235
6 March 1997

Mr. Joel Medlin
U.S. Fish and Wildlife Service - Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, CA 95825

Dear Mr. Medlin:

We are currently distributing the joint Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) for the Disposal and Reuse of the Navy Fleet and Industrial Supply Center, Oakland (FISCO), California for your review and comment. We have enclosed an additional copy of the EIS document for your review to meet the interagency consultation requirements of the Endangered Species Act, Section 7. This is a joint EIS/EIR document supporting the Navy property disposal and subsequent Port of Oakland reuse of FISCO. Pursuant to the Defense Base Closure and Realignment Act of 1990, Public Law 101-510 Title XXIX, and the specific base closure decisions approved by Congress in September 1995, the Navy Fleet and Industrial Supply Center is scheduled for closure in September 1998.

FISCO is a heavily urbanized industrial port area. The presence and status of endangered and threatened species on and adjacent to FISCO is described in Chapter 3 of the EIS/EIR, the Environmental Consequences of the Navy action of the FISCO property disposal is described in Chapter 4, and the Environmental Consequences of Port of Oakland reuse are described in Chapter 5. To expedite this consultation, we request consultation only on the Navy Disposal alternative, and the Port of Oakland Reduced Harbor Fill reuse alternative at this time. This is consistent with your previous request that we consult on a minimum number of alternatives to expedite your review.

We request your written concurrence with our determination provided the mitigation measures as identified in the draft EIS/EIR are implemented as described that the Navy property disposal and subsequent community reuse of FISCO will have no adverse affect on any federally threatened or endangered species under your cognizance. As noted in the draft EIS/EIR, site specific Port dredging and in-water construction activities may require further coordination with your office and the Army Corps of Engineers.

We request you respond by April 22, 1997, so that your concurrence is received by the end of the draft EIS/EIR comment period. Thank you for your assistance on this Navy project. For additional information on the Draft EIS/EIR our point of contact is: Mr. Gary Munekawa at the address shown above, telephone 415-244-3022. I may be reached at 415-244-3008 regarding the Endangered Species Act, Section 7, consultation.

Sincerely,

Douglas R. Pomeroy
Group Leader, Base Conversion/Biology Section
Environmental Planning Branch

copy to: Port of Oakland (Loretta Meyer)

Enclosure



United States Department of the Interior

FISH AND WILDLIFE SERVICE

IN REPLY REFER TO:

Ecological Services
Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340

1-1-97-I-1125

April 24, 1997

Mr. Douglas R. Pomeroy
Environmental Planning Branch
Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Subject: Draft Environmental Impact Statement/Environmental Impact
Report for the Disposal and Reuse of the U.S. Navy's Fleet and
Industrial Supply Center, Oakland, County of Alameda,
California

Dear Mr. Pomeroy:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS) for the Disposal and Reuse of the U.S. Navy's Fleet and Industrial Supply Center, Oakland (FISCO) in Alameda County, California. In your transmittal letter, you requested our concurrence with your determination that the proposed Navy property disposal, and subsequent community reuse of FISCO by the Port of Oakland under the Reduced Harbor Fill reuse alternative, would not adversely affect any federally listed species. Based upon our review of the Draft EIS, we cannot concur with your determination for the proposed action.

The Draft EIS states that a detailed analysis of impacts to the endangered California least tern would be conducted in the future by the Port of Oakland and mitigation measures developed to compensate for identified impacts. The Draft EIS confines this analysis, and development of possible mitigation measures, to those impacts associated with increased turbidity and in-water construction activity during the least tern nesting season resulting from the proposed action. However, the Service is concerned about a number of other potential adverse effects to least terns from the proposed disposal and reuse of FISCO. These include, but are not limited to: (1) permanent and temporary loss or degradation of least tern foraging habitat, (2) predation threats on the nesting colony site at Naval Air Station Alameda and in existing and created foraging areas in the FISCO area, (3) human disturbance from public access provided under the reuse plan in areas proposed to be created as least tern foraging or roosting areas, and (4) increased contaminant loading from development runoff associated with increased facilities constructed and operated under the reuse plan. Finally, we are concerned that selection of a particular reuse alternative in the Record of Decision for the Final Environmental Impact Statement/Environmental Impact Report could preclude

opportunities to avoid or minimize potential adverse effects to least terns identified in a detailed impacts analysis.

Presently, the Service is working closely with representatives from the Port of Oakland to design adequate studies to determine the full array and extent of potential adverse effects to least terns from implementation of reuse alternatives identified in the Draft EIS. However, until these studies are completed, and we can analyze the results to determine reuse modifications and/or mitigation measures necessary to conserve least terns, it is premature and imprudent for us to concur with your determination that the proposed action is not likely to adversely affect the California least tern. However, to facilitate the environmental review process for FISCO, we request that the Navy initiate a programmatic section 7 formal consultation under requirements of the Endangered Species Act of 1973, as amended. In this programmatic consultation, we envision that we would consult on the FISCO property disposal by the Navy and all community reuse alternatives. The programmatic consultation would address information needs, timelines, and processes for subsequent section 7 consultations. Should impact analysis studies being designed and implemented by the Port of Oakland identify potential adverse effects to any federally listed or proposed species with selection of a preferred reuse alternative, then either the Navy could reinitiate formal consultation or a new consultation could be initiated by another Federal lead agency. The Service would not be precluded from determining in any future formal consultation that the preferred alternative would not ensure conservation of any federally listed or proposed species.

If you have any questions, please contact Jim Browning at (916) 979-2739 (Ext. 439).

Sincerely,



for Wayne S. White
Field Supervisor
U.S. Department of the
Interior Coordinator

cc: Reg. Dir., (ARD-ES), Portland, OR
SFBNWR, Project Leader, Newark, CA (M. Kolar)
Dir., CDFG, Sacramento, CA
Port of Oakland, Oakland, CA (J. Amdur/J. Zaitlin)
L. Feeney, Alameda, CA



DEPARTMENT OF THE NAVY

**ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-2402**

IN REPLY REFER TO:

**5090.1B
1852DP/P7-1267
28 April 1997**

**Mr. Wayne White
Field Supervisor
U.S. Fish and Wildlife Service
Ecological Services
3310 El Camino Avenue - Suite 130
Sacramento, CA 95821-6340**

Dear Mr. White:

We are writing in regard to the Draft Environmental Impact Statement/Environmental Impact Report for the Disposal and Reuse the Fleet and Industrial Supply Center, Oakland, and Port of Oakland Vision 2000 Maritime Development. As described in your letter of 24 April 1997, you do not concur with our determination of no adverse affect regarding the potential impacts the disposal and reuse of this property on endangered and threatened species. We therefore request an Endangered Species Act, Section 7, consultation be initiated at this time using the existing information in the Draft Environmental Impact Statement/Environmental Impact Report, as the Biological Assessment for this consultation. We request that you complete this consultation as quickly as possible as we plan to issue a Final Environmental Impact Statement/Environmental Impact Report by July 1997, and issue a Record of Decision in August 1997.

Thank you for your prompt assistance. For further information contact our environmental project manager Mr. Gary Munekawa, 415-244-3022, or myself at 415-244-3008.

Sincerely,

John H. Kennedy
for

**Douglas R. Pomeroy
Group Leader, Base Conversion/Biology Section
Environmental Planning Branch**

Copy to:

**Port of Oakland (Loretta Meyer)
Tetra Tech (Terry Witherspoon)**

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services

Sacramento Field Office

3310 El Camino Avenue, Suite 130

Sacramento, California 95821-6340

IN REPLY REFER TO:

1-1-97-F-85

June 26, 1997

Mr. Douglas R. Pomeroy
Environmental Planning Branch
Department of the Navy
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Subject: Endangered Species Formal Consultation on the Proposed Disposal and Reuse of the U.S. Navy's Fleet and Industrial Supply Center, Oakland, County of Alameda, California

Dear Mr. Pomeroy:

This document provides a programmatic formal consultation pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act), for a proposal by the U.S. Department of the Navy (Navy), for disposal of Navy property and reuse by the Port of Oakland (Port) of the Fleet and Industrial Supply Center, Oakland (FISCO), California. This is in response to your request for formal consultation on the proposed action, which was received by the U.S. Fish and Wildlife Service (Service) on April 30, 1997. This document includes the Service's biological opinion on the effects of that proposed action on the endangered California least tern (*Sterna antillarum* (=albifrons) browni). The Service has determined that the proposed action is not likely to adversely affect the endangered California brown pelican (*Pelecanus occidentalis californicus*).

This biological opinion is based on the (1) Draft Environmental Impact Statement/Environmental Impact Report for the Disposal and Reuse of Fleet and Industrial Supply Center, Oakland, and Vision 2000 Maritime Development (volumes I and II) dated March 1997 (Draft EIS); and (2) additional oral and written communications between representatives of the Navy, Port, and Service.

This biological opinion identifies the need to develop additional information from studies for the analysis of the full extent and magnitude of potential adverse effects to the least tern, or any other federally listed or proposed species, from implementation of any of the reuse alternatives, and other interrelated/interdependent projects, by the Port. Should impact analysis studies being designed and implemented by the Port identify potential adverse effects to any federally listed or proposed species with selection and implementation of any of the proposed reuse alternatives, and other interrelated/interdependent projects, then either (1) the Navy shall reinitiate formal consultation, (2) a new consultation shall be initiated by

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another Federal lead agency, or (3) the Port will need to apply for a permit pursuant to section 10(a)(1)(B) of the Act.

CONSULTATION HISTORY

On March 12, 1997, the Service received the Navy's March 6, 1997, request that we concur with the Navy's determination that the proposed Navy property disposal, and subsequent reuse of the FISCO by the Port under the reduced harbor fill alternative, would not adversely affect any federally listed species. On April 24, 1997, we notified the Navy in writing that we could not concur with their determination and we requested that the Navy initiate a programmatic section 7 formal consultation under requirements of the Act for the proposed disposal and reuse of the FISCO. On April 30, 1997, the Service received the Navy's April 28, 1997, request for initiation of section 7 formal consultation, under the Act, for the proposed disposal and reuse of the FISCO. Per a request from the Port, we have expedited the preparation and completion of this opinion so that they could meet predetermined grant approval deadlines for the reuse of the FISCO.

BIOLOGICAL OPINION

Description of the Proposed Action

The proposed action is disposal and reversion of Navy property, including structures, at the FISCO, and reuse of the FISCO under the Port's Vision 2000 Program. About 392 acres of the FISCO would revert to the Port's ownership after Navy disposal of the property. In May 1940, 392 acres at the FISCO site were deeded to the Navy by the City of Oakland with a reversionary clause requiring that the Navy revert the property to the Port after the property is no longer used for Federal military purposes. An additional 136 acres at the FISCO site have been acquired by the Navy and are not subject to any reversionary requirements; these lands are referred to as the nonreversionary property. Most of the nonreversionary property is currently leased to the Port on a 50-year lease and the remainder of this property is anticipated to be leased to the Port by the time of operational closure of the FISCO by the Navy in 1998. The Navy has discretionary authority to convey the entire nonreversionary property directly to the Port upon operational closure of the FISCO.

The 528-acre FISCO lies within the municipal limits of the City of Oakland (City) in Alameda County and is within the planning jurisdiction of the Port, which is an independent agency of the City and responsible for planning, developing, and administering the City's marine terminal facilities for waterborne commerce. The FISCO site is essentially flat and developed with an array of industrial, transportation, and maritime uses. The FISCO is bounded by the Oakland Middle Harbor to the west, 7th Street to the north, Middle Harbor Road and Southern Pacific West Oakland Railyard to the east, and the Union Pacific West Oakland Intermodal Railyard to the south.

The no action alternative by the Navy would result in the Navy retaining ownership of the 136 acres of nonreversionary Navy property under caretaker status. Under the no action alternative, the Navy would continue leasing the 528-acre FISCO site to the Port under the current 50-year lease agreement authorized by special legislation with allowances to the Port to demolish existing structures as needed. The 392 acres of reversionary Navy property automatically would revert to the Port upon operational closure in 1998. Conveyance to the Port of the 136 acres of nonreversionary Navy property would not occur under the no action alternative. Contamination cleanup on the FISCO site would be continued by the Navy. Under the no action alternative, the remaining 290 acres of non-Navy property would not be developed as part of the Port's Vision 2000 Program. Existing railroad operations would continue, using both Southern Pacific and Union Pacific railyards, in their present configurations and locations. Burlington Northern-Santa Fe container traffic through the Port facilities would continue along Interstate 80. Existing marine terminal operations also would continue.

Under the proposed action of property disposal at the FISCO by the Navy, 136 acres of nonreversionary Navy property would be conveyed to the Port. Caretaker, environmental cleanup, and leasing actions associated with Navy disposal of nonreversionary Navy property would continue after operational closure and prior to property disposal. Property disposal by the Navy would precede implementing each of the Port's reuse plan alternatives.

The Port's reuse plan, the Vision 2000 Program, is a schedule of phased improvements or development projects to modernize and expand the Port's facilities. The Vision 2000 Program includes (1) 136 acres of nonreversionary Navy property, (2) 392 acres of reversionary Navy property, and (3) 290 acres of non-Navy property. The Vision 2000 Program, proposes development of ship, rail, and truck cargo handling facilities to meet the anticipated demand for transportation services in San Francisco Bay (Bay) and northern California and to national markets. The Vision 2000 Program would include development of public waterfront access and a marine habitat enhancement area in the Oakland Middle Harbor, and would expand and upgrade the existing marine, rail, and truck access facilities. The Vision 2000 Program proposes four alternatives for reuse of the FISCO by the Port: (1) maximum marine terminal/maximum rail terminal alternative, (2) minimum marine terminal/minimum rail terminal alternative, (3) maximum marine terminal/minimum rail terminal alternative, and (4) reduced harbor fill alternative. Although not discussed in the Draft EIS, the Port plans to deepen the Oakland Inner Harbor to 50 feet below mean lower low water (MLLW) as part of the proposed expansion of the terminal areas under the reuse alternatives.

The maximum marine/maximum rail alternative would maximize development of a joint intermodal rail terminal to serve Union Pacific, Southern Pacific, and Burlington Northern-Santa Fe railroads, and new marine terminals and ancillary facilities. The proposed rail terminal would occupy about 380 acres. This alternative would involve construction of five 1,200-foot berths and marine terminals along the Oakland Inner Harbor, covering about 260 acres. This level of proposed development would require relocation of the Harbor Transportation Center and Middle Harbor Road. Demolition and site preparation would be required prior to the construction of the proposed facilities.

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The maximum marine/maximum rail alternative includes development of a 206-acre public waterfront access and marine habitat enhancement area in the Oakland Middle Harbor. About 29 acres would be available for public access along the shoreline and at the Western Pacific mole, while the remaining 177 acres would be dedicated to habitat enhancement. This development would provide public access for pedestrians, bicyclists, and vehicles along the entire perimeter of the Middle Harbor and would include areas for spectator sports, informal recreation, nature study, and a marina. Habitat creation and restoration would be developed along the northern and southern perimeters of Middle Harbor. Parking also would be provided to accommodate more than 400 vehicles.

Under the maximum marine/maximum rail alternative, about 17 acres of fill would be removed from along the Oakland Inner Harbor, and about 22 acres of covered fill (i.e., pile-supported fill over water) would be removed from the Oakland Middle Harbor. Placed fill would include hard materials, primarily in the Oakland Middle Harbor for marine and rail terminal development, and fill over water, such as for the proposed marine terminal berths in the Oakland Inner Harbor. For this alternative, the net total amount of solid fill would increase by about 42 acres and the net total amount of pile-supported fill would be reduced by about eight acres. Subtidal fill would be placed in the Oakland Middle Harbor to raise the bottom to an average depth of about minus five to six feet below MLLW to allow for possible subtidal marine habitat enhancement, such as eelgrass habitat.

The minimum marine/minimum rail alternative would involve development of about 190 acres of new rail terminal to serve the Burlington Northern-Santa Fe Railroad. Grade-separated access at the main gate would route truck traffic over rail tracks and 7th Street into the rail terminal. This alternative assumes that the present Union Pacific intermodal operations would remain on the waterfront property it currently leases from the Port along the Oakland Inner Harbor and that the Southern Pacific operations would remain in their current configuration and location. This alternative also would involve developing an approximate 100-acre marine terminal in the Oakland Middle Harbor, along with a channel and turning basin. In addition, new marine terminal uses would be constructed on about 27 acres in the Oakland Outer Harbor on Port and Oakland Army Base property. The Navy has no disposal authority over the Oakland Army Base property and any decision allowing Port use of this land would require separate approval from the U.S. Department of Army (Army). Demolition and site preparation would be required prior to the construction of proposed facilities.

The minimum marine/minimum rail alternative includes development of a 85-acre public waterfront access and marine habitat enhancement area in the northern portion of the Oakland Middle Harbor. About 14 acres would be available for public access at Point Arnold, while the remaining 71 acres would be dedicated to habitat enhancement. This development would provide public access along the northern perimeter of the Middle Harbor and would include areas for recreational sports facilities, such as baseball and softball, areas for passive recreation such as picnicking, and a promenade along Point Arnold. Habitat creation and restoration would be developed along the northern edge of Middle Harbor, and parking would be provided to accommodate about 250 vehicles. Under the minimum marine/minimum rail alternative, about

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60 acres of net fill would be placed in portions of the Oakland Middle Harbor and in the Oakland Outer Harbor to construct proposed marine terminals. About 29 acres of pile-supported fill would be removed from the Middle and Outer Harbors and replaced with two new berths. For this alternative, the net total amount of solid fill would increase by approximately 60 acres and the net total amount of pile-supported fill would be reduced by about 23 acres.

The maximum marine/minimum rail alternative would maximize marine terminal development along the Oakland Inner Harbor and would involve development of a 190-acre new railroad intermodal terminal, similar to the minimum marine/minimum rail alternative, to serve the Burlington Northern-Santa Fe Railroad. Support tracks would be located on a portion of the Oakland Army Base. The Navy has no disposal authority over the Oakland Army Base property and any decision allowing Port use of this 11-acre area would require separate approval from the Army. Grade-separated access to the new rail terminal at the main gate would route truck traffic over rail tracks and 7th Street, without impeding traffic along 7th Street. The maximum marine/minimum rail alternative assumes that Union Pacific would consolidate all of its current intermodal operations into Southern Pacific's facilities. New marine terminals would occupy about 290 acres along the Oakland Inner Harbor and would include five new 1,200-foot berths. This marine terminal development would require relocation of the Harbor Transportation Center. Demolition and site preparation would be required prior to the construction of proposed facilities.

The maximum marine/minimum rail alternative would include development of a 239-acre public waterfront access and marine habitat enhancement area in the Oakland Middle Harbor. About 39 acres would be available for public access along the shoreline and at Point Arnold and the Western Pacific mole, while the remaining 200 acres would be dedicated to habitat enhancement. This development would provide public access along the entire perimeter of the Middle Harbor and would include areas for spectator sports and informal recreation at the Western Pacific mole and Point Arnold. Habitat creation and restoration would be developed along the northern and eastern perimeters of Middle Harbor. Parking would be provided to accommodate about 270 vehicles. Similar to the maximum marine/maximum rail alternative, about 17 acres of hard fill would be removed from the Oakland Inner Harbor, and about 22 acres of covered fill would be removed in the Oakland Middle Harbor for marine terminal development. Placed fill would include hard materials, primarily in the Oakland Middle Harbor for marine terminal development, and covered fill, such as for the proposed marine terminal berths in the Oakland Inner Harbor. For this alternative, the net total amount of solid fill would increase by about 18 acres and the net total amount of pile-supported fill would be reduced by about eight acres.

The reduced harbor fill alternative would involve development of about 320 acres of intermodal rail terminal. The new rail terminal would serve the Union Pacific, Southern Pacific, and Burlington Northern-Santa Fe railroads. Grade-separated access to the new rail terminal at the main gate would route truck traffic over rail tracks and 7th Street without impeding traffic along 7th Street. This alternative also would include development of about 275 acres of marine terminal space and five new berths along the Oakland Inner

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Harbor. This proposed development would require relocation of the Harbor Transportation Center and Middle Harbor Road. Demolition and site preparation would be required prior to the construction of proposed facilities.

The reduced harbor fill alternative would include development of a 227-acre public waterfront access and marine habitat enhancement area in the Oakland Middle Harbor. About 31 acres would be available for public access along the shoreline and at Point Arnold and the Western Pacific mole, while the remaining 196 acres would be dedicated to habitat enhancement. This development would provide public access along the entire perimeter of the Middle Harbor and would include areas for spectator sports at Point Arnold and informal passive recreation, such as picnicking, hiking, and kite flying at the Western Pacific Mole. Habitat creation and restoration would be developed along the eastern and southern perimeters of Middle Harbor. Parking would be provided to accommodate about 150 vehicles. Compared to the other three alternatives, the reduced harbor fill alternative requires the least net amount of solid fill in the Inner and Middle harbors to construct on-site transportation infrastructure and results in a reduction of nine acres. The net total amount of pile-supported fill would be reduced by about eight acres. The Oakland Inner Harbor would be expanded to an approximate width of 730 feet at the northern end of the proposed marine terminal area. As a result, approximately 44 acres of hard fill would be removed from the Oakland Inner Harbor, while about 22 acres of covered fill would be removed in the Oakland Middle Harbor. Placed fill would include about 35 acres of hard materials, primarily in the Oakland Middle Harbor for development of marine terminals, and approximately 14 acres of covered fill, such as for the proposed marine terminal berths in the Oakland Inner Harbor.

Species Account/Environmental Baseline

California Least Tern

The California least tern (least tern) was federally listed as endangered in 1970 (35 FR 1604). California least terns nest primarily in coastal areas from San Luis Obispo County south to San Diego County. The only nesting area for least terns north of San Luis Obispo County is in the Bay. In recent years, only one site in the Bay at Naval Air Station Alameda (NAS Alameda), just south of and adjacent to the FISCO site, has supported nesting least terns. There are two other nesting sites in the Bay area, but the Oakland Airport site has not been used in years and the Pacific Gas and Electric Pittsburg site supports only 1 to 3 pairs each year. Therefore, the NAS Alameda site currently represents the entire Bay area population and is the most northern of least tern breeding colonies by about 178 miles (Caffrey 1995). Because of its northern location, the NAS Alameda site is relatively unaffected during El Niño years when many southern California sites experience pronounced breeding failure resulting from limited food availability.

The least tern breeding site at NAS Alameda has played a significant role in recent increases in the number of least terns throughout California. The NAS Alameda site is consistently one of the most successful sites in California, mainly because the site has not been plagued by high levels of predation and human disturbance during most years, which predominate at most other least

tern sites in California (Caffrey 1995). In 1996, an estimated 208 pairs of least terns nested at the colony, and at least 233 young fledged successfully (Collins 1996). By producing large numbers of fledglings each year, the colony adds large numbers of potential new breeding birds to the statewide population (this site is one of the most important "source" populations in California serving to balance out losses at many "sink" locations throughout the state). Between 1987 and 1994, the NAS Alameda site supported 5 to 6 percent of the statewide breeding population out of 35 to 40 sites each year, but produced an average of 10.6 percent of the total number of fledglings produced statewide in each of those years (Caffrey 1995). Offshore water around NAS Alameda and the FISCO contains extensive, generally productive foraging habitat areas for least terns breeding at the NAS Alameda site. The nesting season typically extends from early mid-April through August at NAS Alameda. In the Bay, least terns typically leave the nest site at NAS Alameda after the young have fledged. The adults and fledglings utilize salt ponds and other Bay habitats as post-breeding foraging and roosting areas until September, when the birds migrate south. Several salt ponds in the south Bay provide important foraging and roosting areas for least terns during the post-breeding season which generally extends from late June through the middle of September.

Effects of the Proposed Action

The Draft EIS identifies the following impacts to least terns from each of the proposed reuse alternatives: (1) reduced foraging ability and/or opportunities from short-term turbidity associated with dredging and construction of new berths in the Oakland Inner Harbor and (2) removal of about 200 square feet of eelgrass beds within the Oakland Inner Harbor from construction of the proposed marine terminal. The Draft EIS states that a detailed analysis of impacts to the least tern would be conducted in the future by the Port and mitigation measures developed to compensate for identified impacts. The Draft EIS confines this analysis, and development of possible mitigation measures, to those impacts associated with increased turbidity and in-water construction activity during the least tern nesting season resulting from the proposed action. The loss of eelgrass beds within the Oakland Inner Harbor would be mitigated with the proposed creation of eelgrass beds in the Oakland Middle Harbor. According to the Draft EIS, no impacts to least terns are anticipated from the development of the Marine Area Enhancement Area within the Oakland Middle Harbor.

The Service has identified a number of other potential adverse effects to least terns from the proposed reuse of the FISCO and other interrelated/interdependent projects, including deepening of the Oakland Inner Harbor channel and berthing areas. These include, but are not limited to: (1) permanent and temporary loss or degradation of least tern foraging habitat from deepening of the Oakland Inner Harbor, (2) predation threats on the nesting colony site at NAS Alameda and in existing and created foraging areas in the FISCO area, (3) human disturbance from public access provided under the reuse plan in areas proposed to be created as least tern foraging or roosting areas in the Oakland Middle Harbor, and (4) increased contaminant loading from development runoff associated with increased facilities constructed and operated under the reuse plan. In addition, potential adverse effects to

federally listed or proposed species or their critical habitat could occur from the disposal of dredged material associated with deepening of the Oakland Inner Harbor channel, depending upon the site(s) ultimately selected for disposal of dredged material. Presently, the Port is implementing studies on, but not limited to, current least tern foraging use and potential impacts to least tern foraging areas in the FISCO area. The Port will continue to develop and implement appropriate studies to determine the full array and extent of all potential adverse effects to least terns and other federally listed or proposed species from implementation of reuse alternatives identified in the Draft EIS, and other interrelated/interdependent projects. However, until these studies are completed, and the results can be fully analyzed by the Service, we are unable to make a determination on the magnitude of potential adverse effects on least terns from implementation of any of the proposed reuse alternatives, and other interrelated/interdependent projects. The Service also is unable to evaluate the adequacy of any potential avoidance, minimization, or other mitigation measures that may be proposed by the Port until such studies are completed.

Cumulative Effects

Cumulative effects are those impacts of future non-Federal actions affecting listed species that are reasonably certain to occur in the action area. Future Federal actions are subject to the consultation requirements under section 7 of the Act and, therefore, are not considered cumulative to the proposed action.

The most serious cumulative effect on least terns in the Bay is the degradation of the Oakland International Airport nesting site as a result of red fox predation and vegetation growth over several years. Long-term loss of the Oakland Airport nesting site would leave only one nesting site in the Bay at NAS Alameda, a military base operationally closed in April 1997. The future of the Alameda nesting site is highly dependent on development and management proposals currently being perfected. The current situation with only one viable nesting site in the Bay makes this endangered species highly vulnerable to stochastic extinction in the Bay.

Conclusion

After reviewing the current status of the California least tern, the environmental baseline, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the disposal of Navy property at the FISCO, as proposed, is not likely to jeopardize the continued existence of the endangered California least tern. Lacking information to fully analyze the extent and magnitude of potential adverse effects to the California least tern, or any other federally listed or proposed species or their critical habitat, from implementation of any of the reuse alternatives for the FISCO, and other interrelated/interdependent projects, by the Port, the Service is unable to make a conclusionary decision on whether the implementation of any of the reuse alternatives, and other interrelated/interdependent projects, would jeopardize the continued existence of the endangered California least tern or any other federally listed or proposed species, or adversely modify or destroy critical habitat. No

critical habitat has been designated for the least tern, therefore, none will be affected for this species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulation pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

Amount or Extent of Take

For the California least tern, we anticipate that no incidental take of this species would occur as a result of the proposed disposal of Navy property at the FISCO. Furthermore, because information is lacking at this time to fully analyze the extent and magnitude of potential adverse effects to the California least tern, or any other federally listed or proposed species or their critical habitat, from implementation of any of the reuse alternatives for the FISCO, and other interrelated/interdependent projects, by the Port, we are unable to quantify the amount of incidental take of the least tern, or any other federally listed or proposed species, that may occur from implementation of any of the reuse alternatives. Therefore, no incidental take is authorized for the implementation of any of the reuse alternatives, or variations thereof, for the FISCO, and other interrelated/interdependent projects, by the Port in this biological opinion.

The Service anticipates that forms of incidental take to federally listed or proposed species, which could occur as a result of reuse of the FISCO and other interrelated/interdependent projects, including deepening of the Oakland Inner Harbor channel and berthing areas, and the disposal of dredged material, by the Port, could include, but not be limited to, the following:

1. Permanent and temporary loss or degradation of least tern foraging habitat from deepening of the Oakland Inner harbor,
2. Predation threats on the least tern nesting colony site at NAS Alameda and in existing and created least tern foraging areas in the FISCO area,

3. Human disturbance to least terns from public access provided under the reuse plan in areas proposed to be created as least tern foraging or roosting areas in the Oakland Middle Harbor,
4. Increased contaminant loading to least tern foraging areas from development runoff associated with increased facilities constructed and operated under the reuse plan, and
5. Potential adverse effects to federally listed or proposed species from the disposal of dredged material associated with the proposed action, depending upon the site(s) ultimately selected for disposal of dredged material.

Effect of the Take

In the accompanying biological opinion, the Service has determined that there is no anticipated take associated with the proposed disposal of Navy property at the FISCO, and that disposal is not likely to jeopardize the continued existence of the endangered California least tern. The Service is unable to make a conclusionary decision on whether the implementation of any of the reuse alternatives, and other interrelated/interdependent projects, would jeopardize the continued existence of the endangered California least tern or any other federally listed or proposed species, or adversely modify or destroy critical habitat. No critical habitat has been designated for the least tern, therefore, none will be affected for this species.

Reporting Requirements

The Service shall be notified within twenty-four (24) hours of the finding of any injured or dead California least tern or their eggs, or any unanticipated damage to California least tern habitat associated with the proposed action. Notification must include the date, time, and precise location of the specimen/incident, and any other pertinent information. The Service contact persons in this office's Endangered Species Division are Jim Browning or Mike Thabault (telephone 916/979-2725). Any dead or injured specimens shall be repositied with the Service's Division of Law Enforcement, 3310 El Camino Avenue, Suite 140, Sacramento, California 95821-6340 (telephone 916/979-2987).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that may be used to help implement recovery plans and recovery actions, or to develop information.

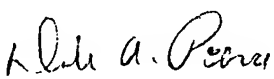
The Service recommends that the Navy continue to effectively protect and manage the least tern nesting colony at NAS Alameda while the property remains in Navy ownership to help meet the recovery objectives for this species.

REINITIATION NOTICE

This concludes formal consultation and conference on the proposed action outlined in your April 28, 1997, request for formal consultation. As provided in 50 CFR section 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, as previously described; (2) new information reveals effects of the actions that may affect listed species or critical habitat in a manner that was not considered in this opinion; (3) the agency action is substantially modified in a manner that causes an effect to listed species that was not considered in this opinion; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation. Should impact analysis studies being designed and implemented by the Port identify potential adverse effects to any federally listed or proposed species with selection and implementation of any of the proposed alternatives, and other interrelated/interdependent projects, then either (1) the Navy shall reinitiate formal consultation, (2) a new consultation shall be initiated by another Federal lead agency, or (3) the Port will need to apply for a permit pursuant to section 10(a)(1)(B) of the Act. The Service shall not be precluded from determining in any future formal consultation that any of the proposed reuse alternatives, and other interrelated/interdependent projects, fail to ensure conservation of any federally listed or proposed species. The Service also shall not be precluded from identifying any reasonable and prudent alternatives or measures that ensure conservation of any federally listed or proposed species.

If you have any questions regarding this biological opinion, please contact Jim Browning or Michael Thabault in this office's Endangered Species Division at (916) 979-2725.

Sincerely,


for Wayne S. White
Field Supervisor

cc: Reg. Dir., (ARD-ES), Portland, OR
SFBNWR, Newark, CA (J. Buffa)
Dir., CDFG, Sacramento, CA
Port of Oakland, Oakland, CA (J. Amdur/J. Zaitlin)
L. Feeney, Alameda, CA
L. Collins, Berkeley, CA

LITERATURE CITED

Caffrey, C. 1995. Characteristics of California least tern nesting sites associated with breeding success or failure, with special reference to the site at the Naval Air Station, Alameda. Final report prepared for the U.S. Navy under contract no. N62474-94T-00302. 69 pp.

Collins, L.D. 1996. California least tern nesting season at the Alameda Naval Air Station 1996. Report prepared for the U.S. Navy under contract no. N62474-96-M-6043. 65 pp.



BIOLOGICAL FIELD SERVICES

WILDLIFE CONSULTATION - DOCUMENTATION - PROTECTION

May 5, 1997

Jody Zaitlin
Environmental Department
Port of Oakland
530 Water Street
Oakland, CA 94607

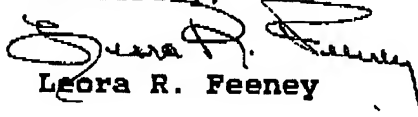
Dear Jody,

The question of a burrowing owl at Middle Harbor Park came to my attention five or six years ago. I visited the park at that time and found no owl. Middle Harbor Park, located on the north side of the Oakland/Alameda Estuary is less than 0.7 acres including the paved parking area and a portion of the access road. The park has a small pier and is used primarily for fishing. Lunch time visitors and families frequent the park, as well. The small park can be a very busy place. It is situated between the American President Lines' port/dock facilities and the Union Pacific Railroad yard. Adjacent areas are open water or industrial, mostly paved land. Foraging opportunities for burrowing owls in this area appear to be very poor at best. Unfortunately, neither the record for the owl siting nor my visit in the early 1990s is available, so the information is now anecdotal.

From January through April of 1997 I've made 16 visits to Middle Harbor Park performing bird surveys. Habitat at this park includes a few trees, a small grassy area with picnic table, a few large rocks along the west end of the grass, the pier, and pavement. There are small holes, 3 to 8 cm, under some of the rocks, and openings in rip-rap bordering the water, but none appear suitable for burrowing owls. No burrowing owl sign has been detected. No ground squirrels have been seen during any of the 1997 visits.

Middle Harbor Park has never appeared to be a location that would likely support a burrowing owl for any length of time. The nearest burrowing owl habitat to the Middle Harbor Park is located at the now closed Naval Air Station in Alameda.

Sincerely,


Leora R. Feeney

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ENTRIX

ENTRIX 77301
590 Ygnacio Valley Road
Suite 200
Walnut Creek, CA 94596
(510) 835-8920
(510) 835-5368 FAX

May 12, 1997

Mr. Jon Amdur
Port of Oakland Environmental
530 Water Street
Oakland, CA 94607

Re: Shallow Subtidal Habitats West of U.P. Mole near Middle Harbor

Dear Jon,

As you know, on 9 May 1997 ENTRIX and Port personnel investigated two sub-areas of Site G at the southern border of Middle Harbor (Figure 1). The major objective of the survey was to characterize a hard-bottom area immediately east of the small "lighthouse" off the U.P. mole. A second objective was to investigate the shallow subtidal area near shore at the mole and the eel grass area off the NAS runway (site D). We also surveyed the eastern two thirds (approximately) of the riprap along the northern shore of Inner Harbor Channel for signs of eel grass.

The Inner Harbor channel was surveyed from about 0715 to 0730. The hard bottom snorkeling surveys were done from approximately 0800 to 0930, which spanned the low tide of (nominally) -0.9 ft. The nearshore area at the mole was surveyed from about 0930 to 1045, and Site D was surveyed from about 1050 to 1115.

The hard-bottom area near the lighthouse appeared to be the remnant of a roadway or other access structure, possibly armored at one time with concrete rubble and other debris. Algal cover was extensive, consisting mainly of *Sargassum muticum*, *Cryptopleura ruprechtiana*, *Polynura latissima*, *Chondracanthus harveyanus*, and *Ulva* sp. cf. *lobata*. (Algal identifications by Dr. Dick Moe, Berkeley Herbarium). One fish (unidentified sculpin) and several red rock crab (*Cancer productus*) were observed in addition to many attached invertebrates including mussels and oysters. Visibility was fair-to-poor, but a useful underwater video recording was made of the major features.

Eel grass (*Zostera marina*) was discovered near the shoreline at the U.P. mole, in an area where obstacles had prevented trawling and seining during earlier visits. The plants were distributed at an approximate elevation of -4 to -6 ft along an approximately 100-ft stretch of shoreline (Figure 2). Most plants were single or in small clumps. The largest clump observed consisted of an approximately 3 ft by 6 ft mass of very dense vegetation, some of it fouled by a filamentous, reddish alga. Attempts to obtain video footage of the eel grass were unsuccessful. Still photos (as yet undeveloped) partially documented the

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JON_MH.DOC rev. May 12, 1997

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location of some of the first plants encountered. The bottom consisted of silty sand, rocky debris, and the remains of broken-off wooden pilings.

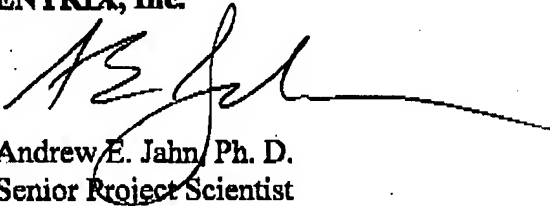
The eel grass at Site D covered an extensive area of several hundred feet just off the sand beach, as witnessed during a beach seine survey on 30 April. A specimen consisting of two stems connected to an approximately 5-inch length of rhizome was collected and placed in your custody for later study.

No eel grass was seen in the Inner Harbor Channel.

I will send copies of photos from Site G when they are available.

Sincerely,

ENTRIX, Inc.



Andrew E. Jahn, Ph. D.
Senior Project Scientist

cc: C. Herrala, K. Merkel
attachments

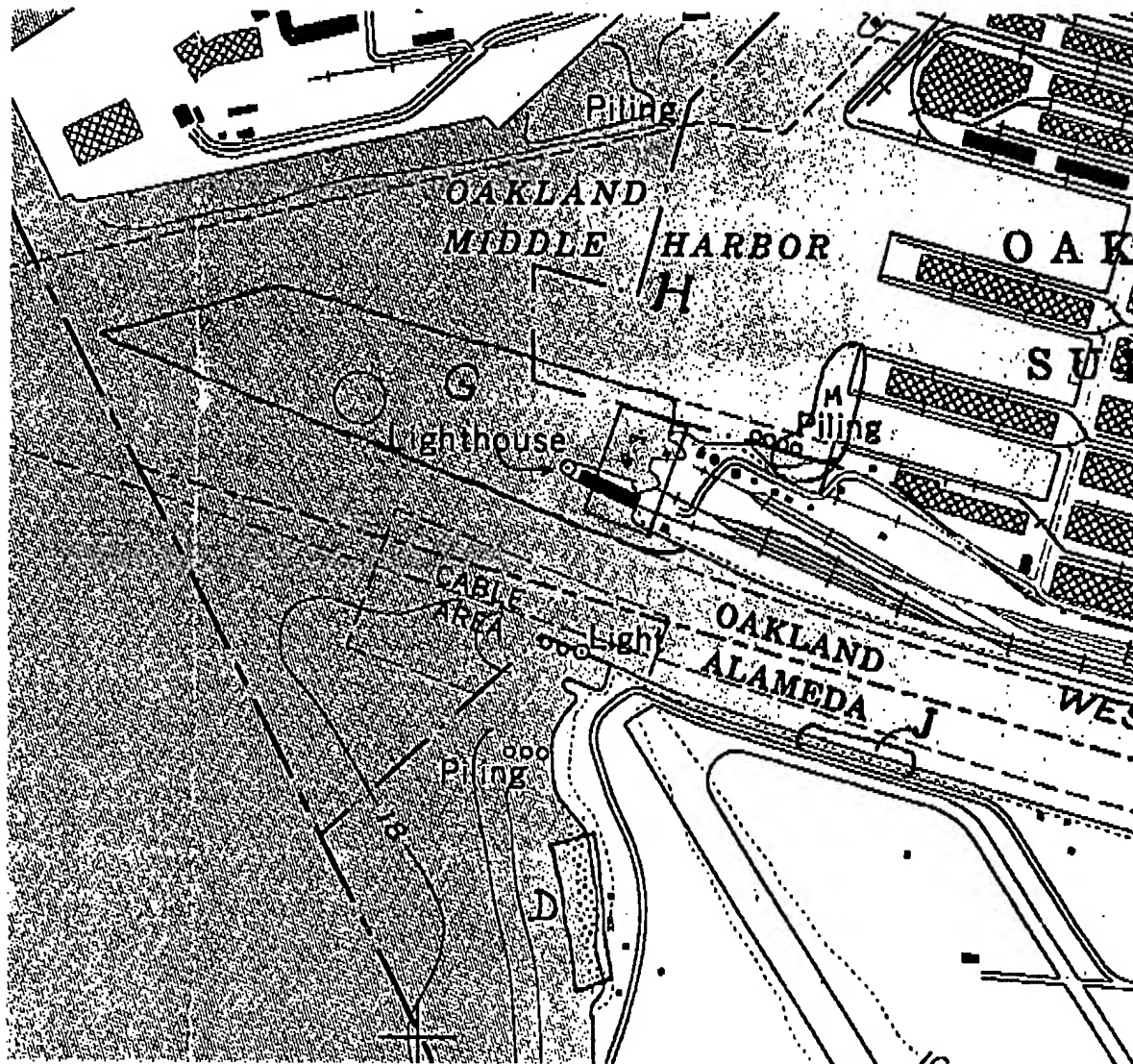


Figure 1.
The area marked
"e.g." is blown
up in Fig. 2.

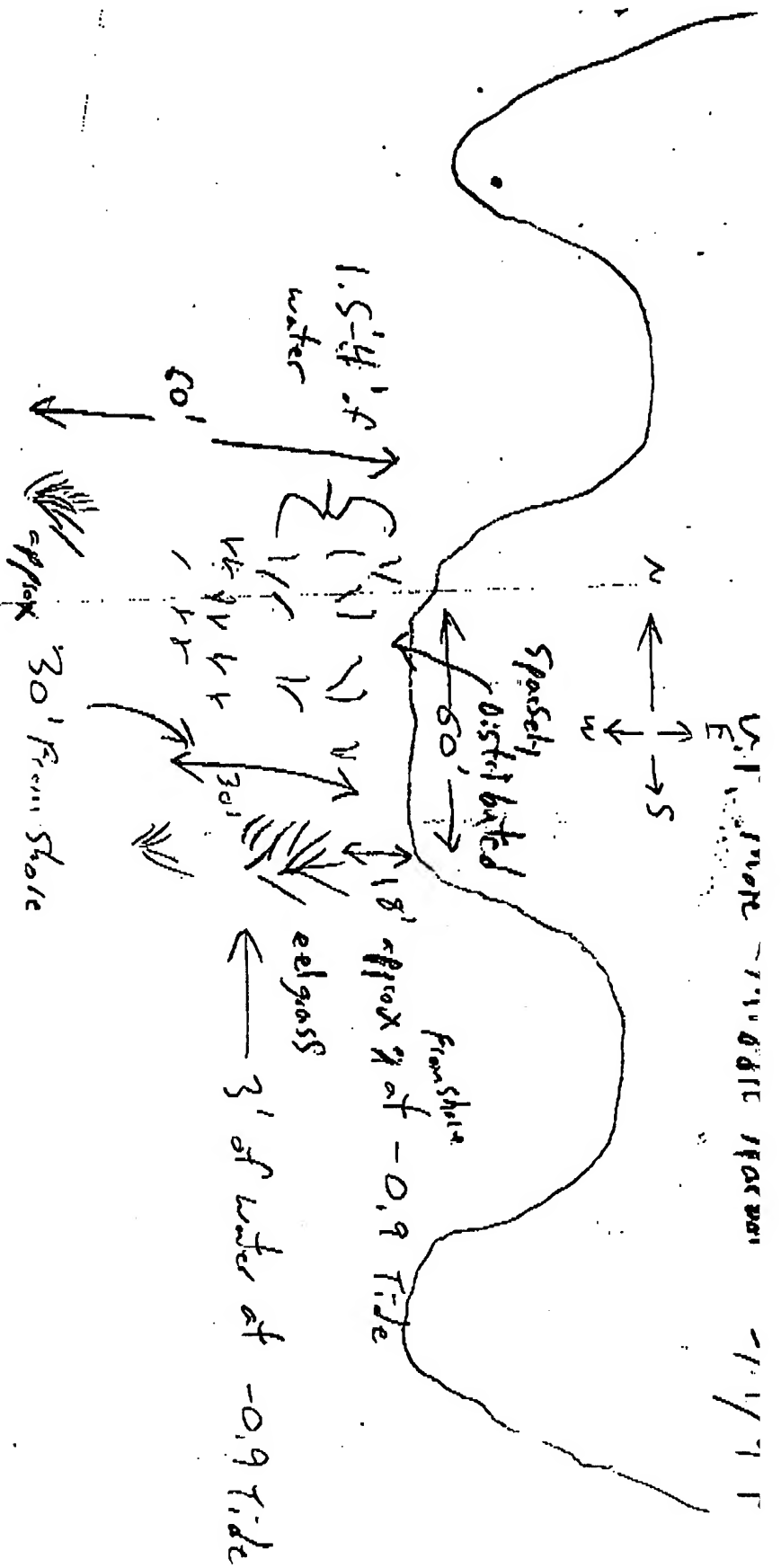
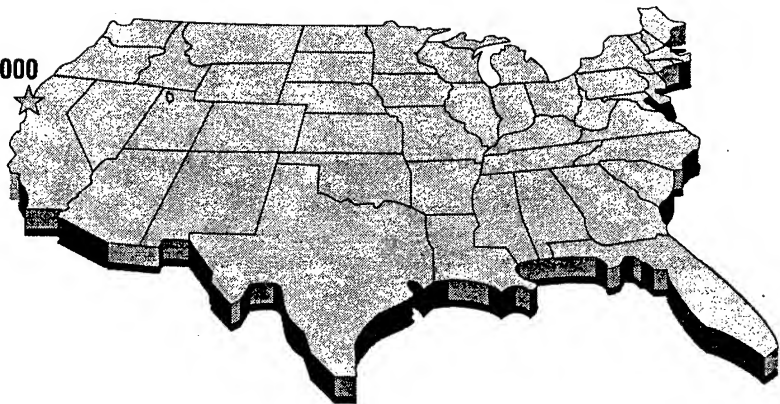


Figure 2.

Substrate + mud and rock mix with a lot of shell fragments

- The northern portion of the bed is sandy with a small proportion of mud-rocks are often about

FISCO/Vision 2000



APPENDIX I
THE PORT OF OAKLAND AND PORT TENANT
REGIONAL STORM WATER
POLLUTION PREVENTION PROGRAM
MARINE TERMINALS SUB-GROUP

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APPENDIX B: TENANTS IN THE PORT OF OAKLAND MARINE TERMINALS SUB- GROUP	

**The Port of Oakland and Port Tenant
Regional Storm Water Pollution Prevention Program**

Marine Terminals Sub-Group

Prepared by
The Port of Oakland
Environmental Department

September 16, 1992

Revisions:
June 18, 1993
and
April 11, 1994

**The Port of Oakland and Port Tenant
Regional Storm Water Pollution Prevention Program**


Marine Terminals Sub-Group

Prepared by
The Port of Oakland
Environmental Department

September 16, 1992

Revisions:
June 18, 1993
and
April 11, 1994

The Port of Oakland and Port Tenant Regional Storm Water Pollution Prevention Program for the Marine Terminals Sub-Group has been prepared to satisfy the requirements of Section A of Water Quality Order 91-13-DEQ (as amended by Water Quality Order No. 92-12-DEQ), National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001. The present revision of this document and all attachments were prepared under my direction or supervision.



Jon Amdur
Environmental Department
Port of Oakland

1 - 4 - 95
Date

The Port of Oakland and Port Tenant Regional Storm Water Pollution Prevention Program

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Appendix A Generic Storm Water Pollution Prevention Plans, Best Management Practices
 for Vehicle Service Facilities

Appendix B Tenants in the Port of Oakland Marine Terminals Sub-Group

Regional Storm Water Pollution Prevention Program Marine Terminals Sub-Group

I. Introduction

In 1987, amendments to the Clean Water Act (CWA) added section 402(p) which established a framework for regulating industrial and municipal storm water discharges under the National Pollutant Discharge Elimination System (NPDES). On November 16, 1990, the Environmental Protection Agency (EPA) published final regulations that established requirements for storm water discharge permits for specific categories of industrial facilities. These categories include shipping, trucking and air transport facilities that conduct vehicle maintenance, or facilities where materials are stored in exposed areas.

The regulations allow authorized states to issue general permits or individual permits to regulate industrial storm water discharge. The California State Water Resources Control Board (Board) has elected to issue a statewide General Industrial Discharge Permit (General Permit) that will cover all industrial discharges except construction activities. To be covered under the State's General Permit, dischargers were required to submit a Notice of Intent (NOI) with the appropriate fees to the Board by March 30, 1992. Port tenants with activities regulated under the General Permit submitted individual NOIs to the Board.

In order to help its tenants and others comply with the new regulations, the Port has organized a working Group (Group) to prepare a storm water monitoring program. The Port is also providing assistance to its tenants in the preparation of the required Storm Water Pollution Prevention Plans (SWPPP), as well as the application of Best Management Practices (BMP). The Group is divided into two sub-groups. The sub-group divisions are based on the members' Industrial Classification and the water body into which they discharge. The two sub-groups consist of the Airport Sub-Group and the Marine Terminals Sub-Group.

In a joint effort between the Port of Oakland and its tenants, a Regional Storm Water Pollution Prevention Plan (RSWPPP) has been developed. This RSWPPP addresses management plans and Best Management Practices (BMPs) that can be implemented uniformly throughout the Port region. Uniformity in management of potential sources of pollution will make compliance easier and can save money on implementation by combining programs. The BMPs have been designed to maximize the benefits and minimize the costs of implementation.

Although a series of "generic" BMPs have been compiled for this program (Appendix A), site-specific BMPs will depend on the type and extent of the activities conducted on site.

Each Port tenant will be furnished a copy of this plan. It is the tenant's responsibility to implement the plans. Additional "Site-Specific" information will be supplied by the tenants and will be included in the appendix of the plans. Site-specific information includes:

1. Hazardous Materials Business Plans, which include a list of all the hazardous materials and the approximate amounts used on site. The Hazardous Materials Business Plans are to be prepared in conformance with Chapter 6.95, Section 25504, of the California Health & Safety Code. Section 25504 requires: (1) an inventory of all hazardous substances or chemical products handled by the business; (2) emergency response plans and procedures to be implemented in the event of release of a hazardous material; and (3) provisions to train all employees in safety procedures to be implemented in the event of a release, or threatened release, of hazardous material. The inventory is to contain sufficient information on how and where the hazardous materials are handled.
2. A site map showing the site boundaries, buildings, storm drains, fueling facilities, maintenance areas, vehicle washing areas, grease trap locations, and any other pertinent information.
3. Spill Prevention Control and Countermeasure (SPCC) plans.
4. Records of hazardous materials spills and disposal since 1988 (a good faith effort is expected in recording previous spills and disposal). In addition, maintain records of all employee training related to hazardous materials, spill response, and storm water education.
5. Descriptions of material loading, unloading and access areas (including hazardous waste/materials storage areas), existing structural and non-structural control measures (if any), methods of on-site storage and disposal of significant materials, and outdoor storage, manufacturing, and processing of materials.

This component of the RSWPPP covers the Marine Terminals Sub-Group (MTSG). Members of the MTSG are Port of Oakland industrial tenants whose major SIC codes consist of marine terminal operations, trucking and related services (Appendix B); activities in the MTSG are covered by SIC codes 3273, 3799, 4190, 4214, 4412, 4424, 4463, 4491, 4731, 4783; these tenants have submitted individual NOIs to the Board. Storm water from the MTSG members often combines with outside storm water sources and flows into the City of Oakland's storm drain system, which is connected in numerous locations with the Oakland Estuary and San Francisco Bay (Figure 1).

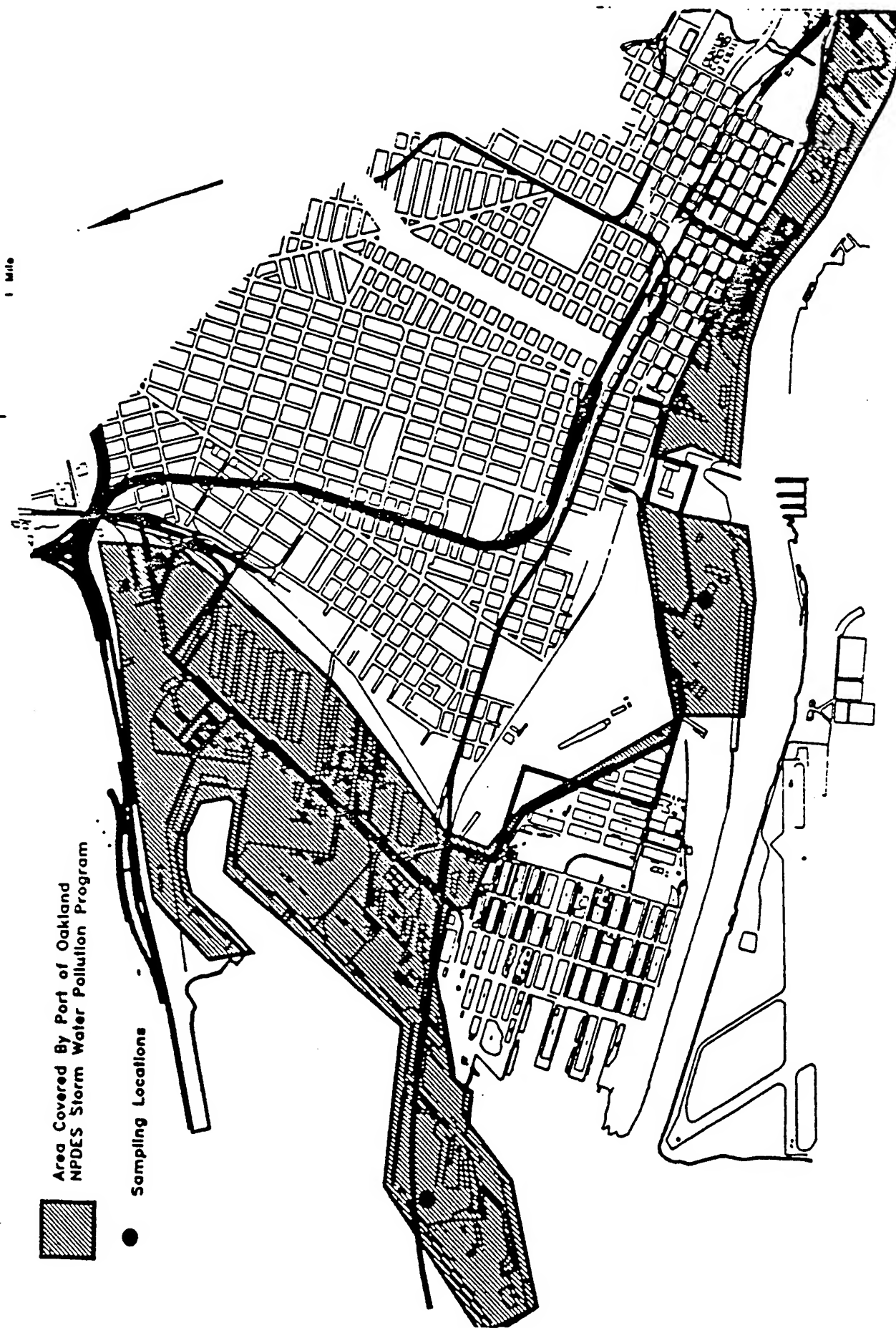


Figure 1: Marine Terminals Area

II. General Approach

Many of the management practices included in this plan are based on BMPs that have been shown to successfully reduce pollutant loads throughout the country. Others have been modified to suit the specific needs of marine terminal operations. The general premise for BMPs is common sense and awareness. The basic approach is as follows:

1. Do not allow any discharge to the storm sewer other than rainwater.
2. When possible, reduce the amount of hazardous substances used at the site.
3. Do as much vehicle maintenance work as possible indoors.
4. Store all hazardous substances properly and dispose of all hazardous wastes in accordance with all State, local, and Federal regulations.
5. If the facility does not currently have one, prepare a Hazardous Materials Business Plan and a Spill Prevention Control and Countermeasure (SPCC) plan. These plans are required under existing legislation (California Health and Safety Code Chapter 6.95, Section 25500, California Code of Regulations (CCR) Title 22, Section 67120 to 67126 and 67140 to 67145 and Title 40 Code of Federal Regulations (CFR) Part 112). However, SPCC plans are not required if the facility does not handle hazardous wastes and the underground buried storage capacity is 42,000 gallons or less of oil, and the storage capacity, which is not buried, of the facility is 1,320 gallons or less of oil, provided no single container has a capacity in excess of 660 gallons (40 CFR 112.1(d)(2)).
6. Maintain records of all employee training, hazardous materials disposal, and spills.
7. Use good housekeeping practices.

III. Facilities Upgrades and Capital Expenditures

In a number of instances, facility upgrades will be beneficial in reducing pollutant loads to the Bay, and generally make permit compliance and maintenance easier on the permittee. Low-cost structural modifications, such as low berms around storm drains to collect sediment and to prevent the direct discharge of spilled material to the storm sewer system, could be constructed in the near future.

Other modifications such as hazardous materials storage areas can be expensive to design and construct and would require budgeting. Decisions should be made as to which upgrades would be most beneficial for each facility, and scheduling of the upgrades should be completed and adhered to. In most cases, the tenant will be responsible for facility upgrades.

All upgrade plans should be reviewed and permitted by the Port of Oakland Engineering Department prior to construction. Low-cost items such as tarps, spill prevention equipment, and inexpensive secondary containments, should be purchased as soon as possible.

IV. Facility Maintenance

Standard Port/Tenant lease agreements contain a clause that requires the tenant to maintain the facility. In addition, the agreement stipulates that the tenant must abide by all local, State, and Federal laws and regulations. It is therefore the tenants' responsibility to conduct all maintenance activities associated with the storm drain permit. If a tenant wishes to have the Port maintain the storm drain system as outlined in the RSWPPP, an agreement can be reached that will allow Port maintenance of the drains, with the associated costs passed on to the tenant.

V. Designated Personnel

Each permittee should designate an individual who will be responsible for NPDES permit compliance (Storm Water Compliance Coordinator). This person must have authority to act on the permit requirements and should be fully versed on the NPDES permit and the RSWPPP. Other personnel should be appointed as an alternate and should also have authority to act on NPDES issues.

In many instances, it is beneficial to have a Storm Water Coordination Committee to review current practices and to help in the modification of work habits. The Coordination Committee should consist of the compliance coordinator, the alternate coordinator, supervisors and staff who are expected to perform the BMPs daily. The Coordination Committee may need to meet only once or twice per year, although more frequent meetings are encouraged.

The designated responsible party for each tenant in the Group SWPPP is included in the list of tenants in Appendix B.

VI. Inspections

Annual inspections will be performed by Port personnel to ensure that all members within the group are in compliance with the SWPPP. The Port will conduct these inspections in addition to the regular inspections that are to be conducted by the main storm water

supervisor at each Port tenant activity. The Port inspector(s) are to complete written documentation of the inspections (audit checklists) for each visit and keep the documentation for at least five years.

Appendix A

Generic Storm Water Pollution Prevention Plans Best Management Practices for Vehicle Service Facilities

Generic Storm Water Pollution Prevention Plans

Best Management Practices for Vehicle Service Facilities

1. Storm Drains

Applicable Rule: Storm Drain Protection

Storm drains are designed to carry ONLY rainwater runoff. All other discharges are prohibited. This prohibition includes any fluid from vehicles including fuel, oil, grease, degreasing solutions, coolants, and rinse water from vehicle washing.

Compliance:

- a: Never pour any vehicle fluid into the storm drain system.
- b: Recycle vehicle fluids and all hazardous materials.
- c: If recycling is not possible, all wastes should be properly disposed of as required by State and Federal Regulations (disposal of hazardous materials is covered in the tenant's Hazardous Materials Business Plan).
- d: Where possible, waste reduction/waste minimization plans will be implemented to reduce the generation of potential pollutants.
- e: Prevent the accidental discharge of vehicle fluids or hazardous materials into both the storm sewer and the sanitary sewer systems. Methods for preventing these discharges are covered under Section 2 (Spill Response) and Section 8 (Secondary Containment of Hazardous Substances).
- f: General procedures for the prevention of discharges to the storm and sanitary sewer systems include:
 - In all circumstances where the facility is large enough to accommodate the equipment requiring maintenance, vehicle maintenance work will be performed inside or under covered structures.
 - For equipment that cannot be serviced under covered areas, all maintenance will be performed with drip pans or non-permeable tarps under the equipment. In addition, where adequate space exists, a bermed area can be constructed that will accommodate the vehicle requiring service. Any spills within the bermed area will be promptly cleaned up in accordance with procedures outlined in Section 2.

- During dry weather, storm drains can be protected using rubber or plastic mats to seal the drains. In addition, low berms can be constructed upstream of the storm drains.
- g: Train all employees on procedures to reduce storm water pollution.
- h: Label all storm sewer drains **STORM DRAIN: STORM WATER DISCHARGE ONLY**. Alternately, reiterate storm water runoff awareness during training and safety meetings.
- i: Clean the storm drain catch basins once a year prior to the rainy season. This should be done in the following manner:
1. Inspect the basin for any sheen or petroleum odors.
 - Maintain a record of all storm drain inspections (see enclosed forms).
 2. If a sheen or petroleum odor is detected on the standing water or the sediment, you should:
 - Have a certified analytical laboratory test the water and sediment prior to cleaning.
 - If hazardous levels of contamination are detected, contract with a hazardous materials disposal firm for removal.
 - If non-hazardous levels of contamination are found, disposal must be appropriate for the level of contamination.
 3. If no sheen or odor is detected, clean out the basin by removing all debris that is accessible (**NOTE: DO NOT FLUSH THE SYSTEM WITH WATER**).

2. Spill Response

Applicable Rule: Storm Drain Protection

Storm drains are designed to carry **ONLY** rainwater runoff. All other discharges are prohibited. This prohibition includes any fluid from vehicles including fuel, oil, grease, degreasing solutions, and coolants. Spill response plans will be created for each facility that handles hazardous substances.

Compliance:

- a: All spills, both large and small, must be cleaned up immediately. Any employee involved in spill response must be trained in the proper method of responding.

Training must include education on personal safety and methods of handling the materials safely (hazardous materials procedures training). The safety of the employee is the first concern. Proper equipment for spill response for each type of material, solvents, acids, etc., must be provided and must be readily available to the trained employee.

- b: All absorbent material and disposable personal protective gear must be disposed of in accordance with all State and Federal laws.
- c: If reportable quantities are spilled on site, notification will be made to the appropriate agencies as soon as possible. Depending on the material spilled and whether it enters the Waters of the State, notification will be made to the Oakland Fire Department, Regional Water Quality Control Board, U.S. Coast Guard, the Port of Oakland, California Department of Fish and Game, and any additional contractors required in order to control and clean up the spill. Site-specific spill response plans and phone numbers can be found in the Appendix. -(to be prepared by tenants)-

3. Sanitary Sewers

Applicable Rule: Permit Requirements Under East Bay
 Municipal Utility District (EBMUD)

EBMUD is responsible for the treatment and discharge of sanitary waste water only. EBMUD does not have the ability to treat non-permitted industrial wastes, nor can they treat storm water runoff. The discharge of any waste chemicals, process water, or storm water to the sanitary sewer system is strictly prohibited. The discharge of any substance other than sanitary wastes must be permitted by EBMUD.

Compliance:

- a: Never dispose of any vehicle fluids, cleaning solvents, or other hazardous substances into the sanitary sewer system.
- b: Recycle vehicle fluids and all hazardous materials.
- c: If recycling is not possible, all wastes should be properly disposed of as required by all State and Federal regulations.
- d: Permanently seal all floor drains connected to the sanitary sewer system within vehicle maintenance areas.
- e: Use only biodegradable detergents in vehicle wash areas (See Section 9).

- f: Do not steam clean engines except in areas that are covered, bermed, and have drainage to the sanitary sewer system through an approved grease trap (See Section 9).
- g: Set up a preventative maintenance schedule for the inspection, cleaning, and proper disposal of all grease trap wastes.

4. Floor Drains

Applicable Rule: Permit Requirements Under East Bay
 Municipal Utility District (EBMUD)

EBMUD prohibits the discharge of fluids from vehicle maintenance areas without a permit. Permits may be available for treated discharges to the sanitary sewer system. EBMUD requires that all non-permitted drains within vehicle maintenance areas must be permanently sealed.

Compliance:

- a: Permanently plug all floor drains within vehicle maintenance work areas, OR contact EBMUD to obtain a permit to discharge to the sanitary sewer system. (Port of Oakland tenants must notify the Port Building Permit Department prior to modifying any plumbing).
- b: Clean floors in the following manner:
 - Clean all spills using absorbent material such as sawdust or cat litter.
 - Sweep the floor using absorbent material. Reuse this material for numerous cleanings or for spill cleanup.
 - Mop the floor using biodegradable detergent and dispose of rinse water into sink.
- c: Recycle vehicle fluids and all hazardous materials.
- d: If recycling is not possible, all wastes should be properly disposed of as required by all State and Federal regulations.
- e: Clean all vehicle parts in approved containment/recycling system (see section 5, Parts Cleaning).
- f: Clean up all spills immediately (see section 2, Spill Response).

5. Parts Cleaning

Applicable Rule: Protection of the Waters of the State
 (Surface and Ground Water)

Solvents used to clean parts are regulated under State and Federal laws. The discharge of solvents to Waters of the State (surface water or ground water) is a direct violation of the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), and other laws. Solvents must be used and stored in a manner to eliminate discharges to water, soil, or air. Used non-solvent cleaners should be disposed of as waste to prevent the discharge of grease, oil, and metals to the environment.

Compliance:

- a: Implement a waste minimization program if possible. By reducing the amount of solvents and degreasers used, it is possible to save money and reduce the possibility of discharges to the environment.
- b: Use self-contained parts washers, which include a storage drum, collection basins, solvent sprayers, splash guards (and in some cases, fume hoods). These washers are leased by companies that will pick up spent solvents and deliver fresh solvents.
- c: All parts should be cleaned in one area set aside for this purpose. This area should be away from any storm sewer and sanitary sewer drains.
- d: It may be practical for companies that use large volumes of solvents to treat the solvent on site for reuse. Concentrated waste water from the recycling process should be tested and disposed of in accordance with all applicable rules and regulations. (On-site recyclers may be subject to California Environmental Protection Agency (Cal EPA) Permit-by-Rule regulations.)

6. Changing Vehicle Fluids

Applicable Rule: Protection of the Waters of the State
 (Surface and Ground Water)

Vehicle fluids are not to be discharged to the sanitary sewer or storm sewer systems. Waste fluids spilled outside, even when they are promptly cleaned up, may mobilize during storms and enter the storm sewer system.

Compliance:

- a: All vehicle fluid changing should be conducted inside when possible.

- b: When circumstances prevent indoor maintenance (e.g., the maintenance of large equipment), non-permeable tarps or drip pans should be used.
- c: Special outdoor maintenance areas can be constructed which slope away from storm drains and into containment areas to facilitate cleanup in the event of a fluid spill.
- d: Purchase or fabricate fluid transfer equipment (e.g., oversized drip pans, drain caddies with funnels and pumps, or pump extraction equipment) that will reduce the chance of spills during transfer. The equipment selected should be specific for the site and need.
- e: Place spill response equipment nearby when transferring fluids.
- f: Depressurize all pressurized fluid systems (e.g., hydraulic systems or pressurized coolant systems) prior to beginning any repair work.

7. Leaking Vehicles

Applicable Rule: Protection of the Waters of the State
 (Surface and Ground Water)

Vehicle fluids are not to be discharged to the sanitary sewer or storm sewer systems. Waste fluids spilled outside, even when they are promptly cleaned up, may mobilize during storms and enter the storm sewer system.

Compliance:

- a: Place drip pans under leaking vehicles and restrict use until vehicle is repaired.
- b: Designate parking spaces for all equipment so sources of leaking equipment can be determined.
- c: Promptly clean up any spilled fluids.
- d: Repair leaking equipment within 24 hours of leak detection (except when parts are not available).

8. Secondary Containment of Hazardous Materials

Applicable Rule: Protection of the Waters of the State
 (Surface and Ground Water)

Vehicle fluids are not to be discharged to the sanitary sewer or storm sewer systems. Waste fluids spilled outside, even when they are promptly cleaned up, may mobilize during storms and enter the storm sewer system. Secondary containment of waste fluids and proper storage of chemical supplies will help reduce the chance of discharges to the environment. State and Federal laws require secondary containment for storage of hazardous wastes, used oil, or hazardous materials stored in USTs, as well as the preparation of Spill Prevention Control and Countermeasure (SPCC) plans if (1) hazardous wastes are stored or (2) if oil is stored and any of the following three conditions are met: the underground buried storage capacity of the facility is greater than 42,000 gallons of oil; the storage capacity, which is not buried, is greater than 1,320 gallons of oil; or a single aboveground container has a capacity in excess of 660 gallons.

Secondary containment should be provided for used batteries. Used batteries should be placed in plastic containers until the batteries can be picked up by a battery service. New batteries should be stored in an earthquake-safe manner (i.e., stored away from the edge of shelves, use shelves equipped with restraining straps, etc.). New or used batteries should never be stored outside.

Compliance:

- a: Purchase appropriate secondary containment for the amount of waste or stock chemicals stored on site. Secondary containment equipment comes in many designs. An inexpensive system (used by the Port of Oakland) consists of a polyethylene tub capable of holding four 55-gallon barrels. The tub has a sliding cover to allow outdoor storage. Other systems consist of steel pallets with containment or even specialized storage sheds with containment floors, material dispensers, ventilation, lighting, ramps, and fire suppression equipment. When purchasing secondary containment, follow these rules:
- The containment must hold 110% of the material in one container (if all are the same size), 150% of the volume of the largest container, or 10% of the total volume of all the containers within the containment.
 - Make sure that the material that the containment is made of is compatible with the stored wastes (e.g., acids, solvents etc.)
 - Allow for proper ventilation.

- b: An alternative to pre-fabricated containments is to construct a containment area using impermeable materials and berms (asphalt or concrete are acceptable if there are no cracks). The area and berms should be designed to hold 10% of the maximum amount of material that could be stored within the area. If this area is constructed outside, the containment area should have a roof to prevent the containment from filling with rain water.
- c: Any spills within the secondary containment should be cleaned up promptly. **NOTE: OVERPACK DRUMS ARE NOT SECONDARY CONTAINMENT.**

9. Vehicle Washing and Steam Cleaning

Applicable Rule: Protection of the Waters of the State
 (Surface and Ground Water)

Vehicle wash water is not to be discharged to the storm sewer system. Wash water may be discharged to the sanitary sewer under the conditions outlined below.

Compliance:

- a: Never discharge vehicle exterior, undercarriage, or engine wash water or steam cleaning residues to the storm sewer system.
- b: Where possible, construct a vehicle washing area that can recycle wash water or can discharge wash water to the sanitary system under approved conditions:
 - Use only biodegradable detergents.
 - Ensure that no storm water can enter the sanitary sewer drainage system.
 - Steam clean only if there is:
 - 1. A grease trap attached to the sanitary sewer drainage system, OR
 - 2. No solvents are used as part of the steam cleaning process.

In addition:

- 3. The discharge must be approved by EBMUD, OR
- 4. The discharge must drain into a holding tank and be disposed of as wastes instead of to the sanitary system.

- c: Contract with a vehicle washing service that can recycle wash water or will dispose of wash water in an approved manner.
- d: Rinsing of vehicle exteriors WITH WATER ONLY for appearances IS PERMITTED for discharge to storm sewers.
- e: NOTE: Steam-cleaning wastes, or rinse water using degreasers often have high levels of hydrocarbon residues and metals. Engine and undercarriage rinse water may be considered a hazardous waste. Testing of rinse water may be required by State and Local regulators.

10. Vehicle Fueling

Applicable Rule: Protection of the Waters of the State
 (Surface and Ground Water)

Vehicle fueling must be done in a manner to reduce spills and discharges to the storm and sanitary sewer systems.

Compliance:

- a: Operating instructions shall be posted at each fueling facility with emergency phone numbers.
- b: An attendant will always be present during any fueling or fuel transferring operations.
- c: Topping off is strictly prohibited.
- d: Fuel will not be stored in buckets, open drums, or any other open containers.
- e: Follow all procedures as outlined in the Underground Storage Tank Operating Permit Application and Monitoring, Spill Prevention and Emergency Response Plan. All Port of Oakland tenants with Port-owned tanks have a copy for their facility (See Appendix B).
- f: Spill cleanup equipment will be located near the fueling facility and be readily available to trained personnel (See Section 2).
- g: Only trained personnel shall operate mobile fueling facilities (tank trucks), and spill response equipment will be maintained on all mobile fueling sources.
- h: A low berm can be constructed around any storm drains within the watershed that drains the fueling area.

11. Maintaining Records

Applicable Rule: Requirement Under General Industrial Storm Water NPDES Permit and the California Code of Regulations

Records of all employee training, storm sewer inspections, hazardous waste disposal, site spills, and storm sewer maintenance cleaning (yearly) must be kept on-site.

Compliance:

- a: Maintain records of all employee training including:
 - Hazardous Materials awareness training
 - Spill cleanup procedures
 - Storm water pollution education
- b: Maintain records of storm sewer inspections (see attached forms). Storm sewers should be visually inspected at least once per month for dry season discharges, oil sheen, or petroleum odors.
- c: Maintain records of the yearly storm sewer cleaning including:
 - 1. What material was removed (sediment, plastic, etc.).
 - 2. Was the material contaminated, and if so, what was the contaminant?
 - 3. What was the final disposition of any contaminated material?
- d: Maintain a record and disposal manifests for all hazardous waste disposal
- e: Maintain a record of all spills that occur outside. Small spills (a few gallons) or leaking vehicles do not need to be logged as long as they are promptly cleaned. Spill logs should include:
 - 1. What was spilled and approximately how much.
 - 2. What was done to respond and who was notified.

PORT OF OAKLAND
INSPECTION REPORT
VEHICLE SERVICE FACILITIES

Inspected By: _____

Date: _____

Tenant Representative

Signature: _____

Title: _____

GENERAL INFORMATION

1. FACILITY NAME: _____
2. FACILITY ADDRESS: _____
3. MAILING ADDRESS (IF DIFFERENT): _____
4. CONTACT PERSON: _____
TITLE: _____
5. PHONE NUMBER: _____
6. PRIMARY BUSINESS ACTIVITY: _____

SUBCATEGORIES:

general repair: _____
radiator repair: _____
dip washing: _____
engine cleaning: _____
body repair: _____
fleet operations: _____

fuel dispensing: _____
exterior vehicle washing: _____
machining: _____
salvage/wrecking: _____
painting: _____

SITE-SPECIFIC REQUIREMENTS FOR VEHICLE SERVICE FACILITIES

The following is a list of site-specific requirements as described on page 2 of the *Port of Oakland Group Storm Water Pollution Prevention Program*. Circle the appropriate response (Yes, No, N/A) and add comments as necessary.

1. HAZARDOUS MATERIALS BUSINESS PLAN

Yes No N/A Does the facility have a Hazardous Materials Business Plan that includes a list of all hazardous materials and the approximate amounts used on-site?

2. SITE MAP

Yes No N/A Does the facility have a site map, including the following information:_____

Yes No N/A site boundaries:_____

Yes No N/A all buildings:_____

Yes No N/A all storm drains:_____

Yes No N/A all fueling facilities:_____

Yes No N/A all maintenance areas:_____

Yes No N/A all vehicle washing areas:_____

Yes No N/A all grease trap locations :_____

Yes No N/A any other pertinent information:_____

3. SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

Yes No N/A If an SPCC plan is required, has one been prepared?_____

4. RECORDS OF SPILLED MATERIALS AND TRAINING

Yes No N/A Has a record of all spills been kept since 1988?_____

Yes No N/A Have records been maintained regarding employee training on hazardous materials, spill response, and storm water education? See also Maintaining Records in the Generic Requirements, Section 11 (page 5)._____

GENERIC REQUIREMENTS FOR VEHICLE SERVICE FACILITIES

The following are generic requirements as described on pages 5 through 15 of the *Port of Oakland Group Storm Water Pollution Prevention Program* for vehicle service facilities. Circle the appropriate response (yes, no, N/A) and add comments as necessary.

1. STORM DRAIN PROTECTION (PAGES 5 AND 6)

Yes	No	N/A	Is there dry weather protection? _____
Yes	No	N/A	Is the area around the storm drain free from evidence of recent spills or staining? _____
Yes	No	N/A	Are all storm drains labeled? _____
Yes	No	N/A	Has the annual cleaning been completed? If no, when? _____

2. SPILL RESPONSE (PAGES 6 and 7)

Yes	No	N/A	Is a spill response plan in place? If no, when? _____
Yes	No	N/A	Have all reportable spilled quantities been properly documented (as per the spill response plan)? _____
Yes	No	N/A	Are spills cleaned up immediately? _____
Yes	No	N/A	Is proper spill response equipment present? _____
Yes	No	N/A	Is spill response equipment easily accessible in work area? _____

3. SANITARY SEWER PROTECTION (PAGES 7 and 8)

Yes	No	N/A	Is there a preventive maintenance schedule for inspection, cleaning, and proper disposal of grease traps? _____
Yes	No	N/A	Is the area around the sanitary sewer free from evidence of recent spills or staining? _____

4. FLOOR DRAINS (PAGES 8 and 9)

Yes	No	N/A	Are all floor drains within the maintenance area(s) plugged? _____
Yes	No	N/A	Has a permit been obtained for any unplugged floor drains? _____
Yes	No	N/A	Are proper floor cleaning methods as per the SWPPP used (i.e., swept then mopped)? _____

5. PARTS CLEANING (PAGE 9)

Yes	No	N/A	Is a waste minimization program in place?_____
Yes	No	N/A	Is a self-contained parts washer present? Describe_____
Yes	No	N/A	Is the parts washer location acceptable?_____

6. CHANGING VEHICLE FLUIDS (PAGE 10)

Yes	No	N/A	Is fluid changing conducted inside? If no, where?_____
Yes	No	N/A	Are drip pans used if outdoor fluid changes are required?_____
Yes	No	N/A	Is the fluid transfer equipment designed to reduce the chance of spills during transfer to recycling or disposal containers?_____
Yes	No	N/A	Are all pressurized fluid systems de-pressurized prior to beginning work?_____

7. LEAKING VEHICLES (PAGES 10 and 11)

Yes	No	N/A	Do leaking vehicles/equipment have drip pans?_____
Yes	No	N/A	Have parking spaces been designated for all vehicles/equipment?_____
Yes	No	N/A	Are leaking vehicles/equipment repaired within 24 hours?_____

8. SECONDARY CONTAINMENT OF HAZARDOUS MATERIALS (PAGES 11 and 12)

Yes	No	N/A	Has a Spill Prevention Control and Countermeasures Plan been prepared for aboveground storage areas with a capacity of more than 660 gallons in a single container or 1,320 gallons in combined containers of fuels?_____
Yes	No	N/A	Is the secondary containment adequate to contain 110% of one container (if all containers are alike) or 150% of the volume of the largest container?_____
Yes	No	N/A	Is the secondary containment material compatible with the stored wastes?_____
Yes	No	N/A	Are only compatible materials stored together?_____
Yes	No	N/A	Is the secondary containment in good condition?_____
Yes	No	N/A	Is the secondary containment properly covered?_____
Yes	No	N/A	Does the secondary containment area have adequate ventilation?_____

9. VEHICLE WASHING AND STEAM CLEANING (PAGES 12 and 13)

Yes	No	N/A	Is vehicle washing done on-site? _____
Yes	No	N/A	Are only biodegradable soaps or water only used? _____
Yes	No	N/A	Is equipment/engine steam cleaning done on-site? _____
Yes	No	N/A	Is the wash area approved and permitted? _____
Yes	No	N/A	Does the wash area have an approved sump? _____
Yes	No	N/A	Is the wash area drain secure from the entry of storm water? _____

10. VEHICLE FUELING (PAGES 13 and 14)

Yes	No	N/A	Are proper operating instructions posted at the fueling facility? _____
Yes	No	N/A	Is an attendant always present during fueling activities? _____
Yes	No	N/A	Is fuel being stored properly (i.e., not in buckets, drums or open containers)? _____
Yes	No	N/A	Is spill cleanup equipment located next to the fueling area? _____
Yes	No	N/A	For mobile fueling activities, are only trained personnel operating the refueling equipment? _____

11. MAINTAINING RECORDS (PAGES 14 and 15)

Yes	No	N/A	Have employee training records been maintained? including the following: _____
Yes	No	N/A	Hazardous materials awareness training? _____
Yes	No	N/A	Spill cleanup procedures? _____
Yes	No	N/A	Storm water pollution prevention education? _____
Yes	No	N/A	Have records of storm drain inspections been maintained? _____
Yes	No	N/A	Have records of yearly storm drain clean-out been maintained? including the following: _____
Yes	No	N/A	Wastes removed? _____
Yes	No	N/A	If the waste was contaminated, was the waste disposed of properly? _____
Yes	No	N/A	Have all hazardous waste manifests been retained? _____
Yes	No	N/A	Have all spills been recorded (including the following information?): _____
Yes	No	N/A	Material spilled and how much? _____
Yes	No	N/A	What was done to respond and who was notified? _____

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**PORT OF OAKLAND
INSPECTION REPORT (OPTIONAL*)**

CLEANING ACTIVITIES					
Activity	Number	Type of cleaning material used (e.g., water, steam, solvent, heat, dry abrasives, alkali cleaner, etc.)	Waste Handling (e.g., sanitary sewer, shipped for disposal, recycled, on-site reuse, etc.)	Sewer Use Permit? Yes / No / NA	Comments
I. Parts Cleaning	Units				
a. Sink(s) (e.g., solvent)					
b. Spray cans					
c. Hot tank(s)					
d. Steam cleaner(s)					
e. Jet sprayer(s)					
f. Mechanical cleaning					
g. other					
h. other					
i. other					
II. Engine/Undercarriage	#/day				
a. Engines					
b. Undercarriages					
III. Vehicle Washing	Veh./day				

* Optional information sheet to be used at the discretion of the Port auditing personnel

PORT OF OAKLAND

OTHER ACTIVITIES

Activity	Activity present	Waste Handling (e.g., sanitary sewer, shipped for disposal, recycled, on-site reuse, treatment, etc.)	Sewer Use Permit? Yes / No / NA	Comments
I. Fluid removal/replacement				
a. Radiator fluid				
b. Motor oil				
c. Transmission fluid				
d. Hydraulic fluid				
e. Differential lubricant				
f. Refrigerant				
III. Radiator Repair				
a. Boil out tank				
b. Flush booth waste				
c. Test tank waste				
d. Other				
III. Battery Replacement				
IV. Body shop waste				
a. Thinner/Paint				
b. Other				
c. Other				
V. Machining				
VI. Wrecking/Salvaging				
VII. Other				

* Optional information sheet to be used at the discretion of the Port auditing personnel

Appendix B

Tenants in the Port of Oakland Marine Terminals Sub-Group

Tenants in the Port of Oakland Marine Terminals Sub-Group

Note: SIC Codes, Industrial Activities, and designated responsible parties for these facilities were provided with letters to the Port confirming intent to participate in the Group Storm Water Pollution Prevention Plan.

American President Lines
1395 Middle Harbor Road
Oakland, CA 94607
Mark Yamamoto
(510) 272-3921

SIC Code 4412
Vehicle Maintenance and Storage

Berkeley/Oakland Ready Mix Company
491 Embarcadero
Oakland, CA 94606
Robert Branstad
Manager
(510) 526-1611

SIC Code 3273
Manufacturing
Vehicle Maintenance

International Transportation Services, Inc.
TransBay Container Terminal, Inc.
707 Ferry Street
Oakland, CA
Bill Walker
Supervisor, Safety & Loss Control
(510) 839-8228

SIC Codes 3799, 4491
Vehicle Maintenance

Keep on Trucking
370 8th Avenue
Oakland, CA
Richard Padovani
Terminal Manager
(510) 893-6011

SIC Code 4214
Vehicle Maintenance
Material Handling

Maersk Line Terminal
909 & 700 Ferry Street
Oakland, CA
Nick J. La Rocco
Marine Operations Superintendent
(510) 835-7500

SIC Codes 4412, 4424, 4491
Material Handling

Marine Terminals Corporation
Seventh Street Public Container Terminal
90 Seventh Street
Oakland, CA
Bruce Elerick, R.E.A.
Manager, Safety & Security
(510) 645-1458

SIC Code 4491
Vehicle Maintenance, Stevedoring

Matson Terminals, Inc. SIC Code 4463
Oakland Terminal
3050 Seventh Street
Oakland, CA
G. N. Garvey
F&M Manager
(510) 271-9826

Material Storage and Handling
Vehicle Maintenance

Military Traffic Management
Command Western Area
Oakland Army Base
Oakland, CA
Glenna M. Eiermann
Environmental Engineer
(510) 466-2293

SIC Codes 4491, 4731, 4783
Material Storage and Handling
Vehicle Maintenance and Storage

Sea Land Services, Inc. SIC Codes 4412, 4424
1425 Maritime Street
Oakland, CA
Shirley Kennedy
Loss Prevention & Safety Supervisor
(510) 271-1294

Vehicle Maintenance
Material Handling

Stevedoring Services of America
Howard Container Terminal
1 Market Street
Oakland, CA
Sandi Lira
(510) 238-4400

SIC Code 4190
Vehicle Maintenance

Stevedoring Services of America
Berth 23
1195 Maritime Street
Oakland, CA 94607
Jacques Lira
Terminal Manager
(510) 419-1800

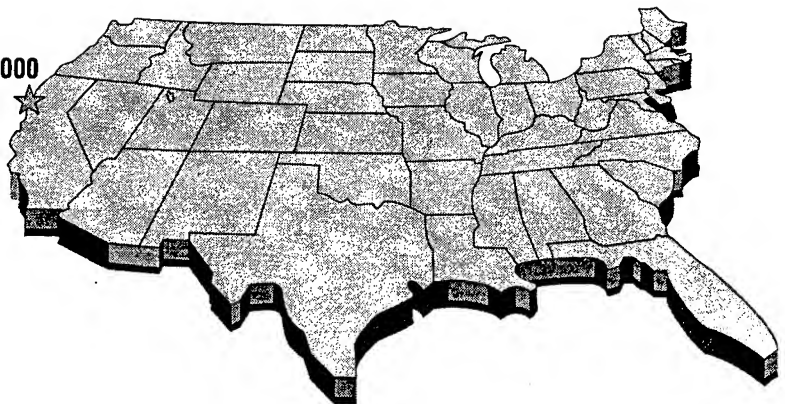
SIC Code 4190
Vehicle Maintenance

Trans Pacific Container Service Corporation
5100 Seventh Street
Oakland, CA
Terry W. Murphey
Maintenance & Repair Manager
(510) 834-0680

SIC Codes 4412, 4424
Material Handling and Storage
Vehicle Maintenance and Storage

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FISCO/Vision 2000



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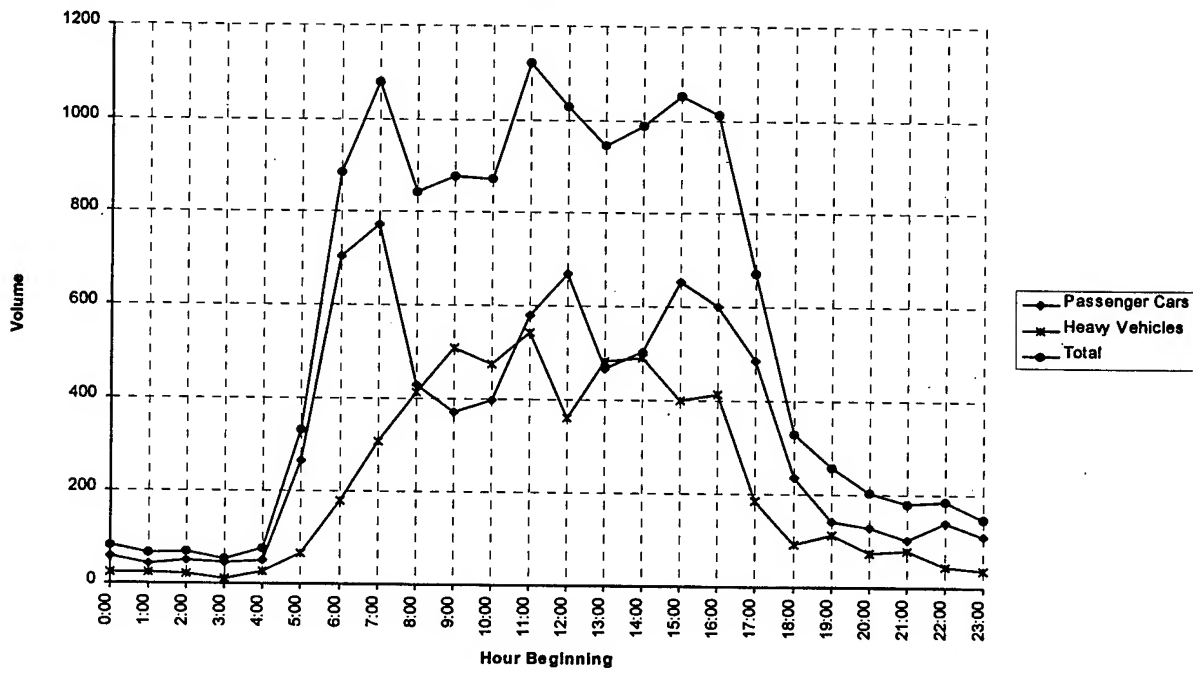
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Appendix J.1
Existing Traffic Data

Figure J.1-1

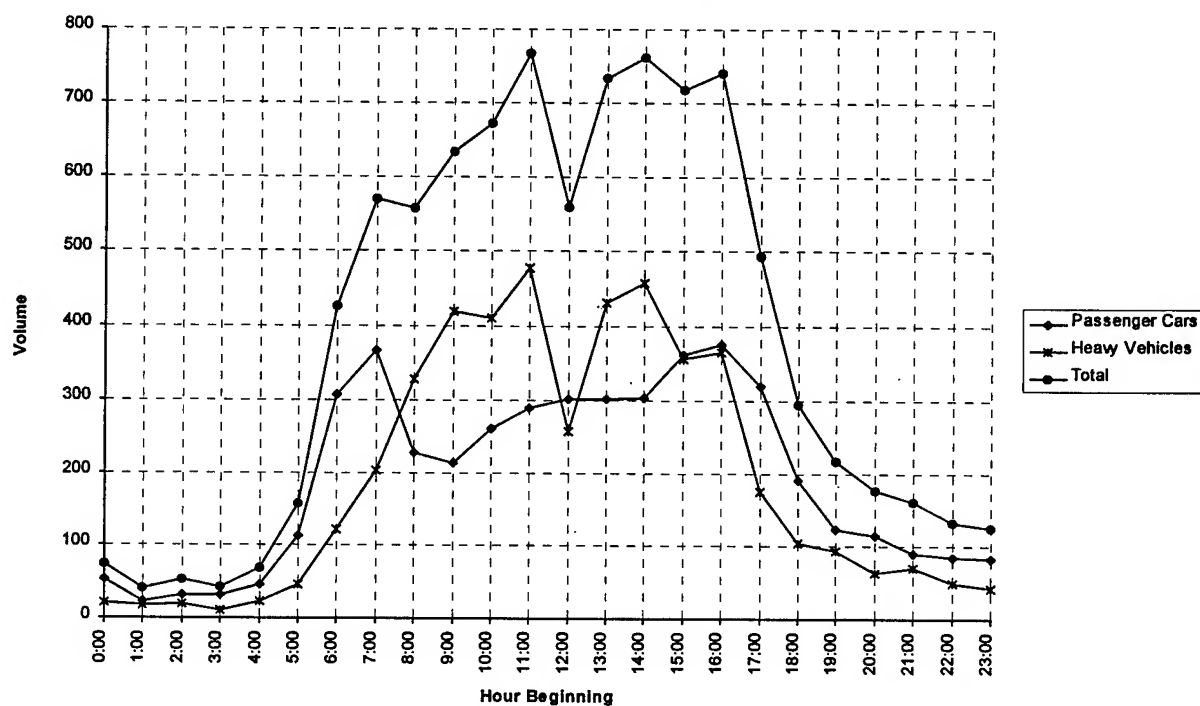
Traffic on Middle Harbor Rd. South of 3rd Street



Traffic counts collected on June 6, 1996, by Wiltec.

Figure J.1-2

Traffic on 7th St. Extension



Traffic counts collected on June 6, 1996, by Wiltec.

Table J.1-1

**FISCO/Port Vision 2000 EIS/EIR
Employment for Lease Areas 4 & 5**

Tennant	Total FISCO Employment		Percent in Lease Areas 4 & 5	FISCO Employment in L.A. 4 & 5	
	1990	1996		1990	1996
AFGE	2	1	100%	2	1
Coast Guard	1	1	100%	1	1
Combat Log Gru 1	96	41	100%	96	41
DDOC	571	4	90%	514	4
DECA	62	4	100%	62	4
DFAS	0	183	100%	0	183
DISA	0	7	100%	0	7
DPSDO	38	21	100%	38	21
FAADCPAC	4	1	100%	4	1
Federal Credit Union	10	6	100%	10	6
FISC	780	290	100%	780	290
ISSOT	10	8	40%	4	3
JMSDF	1	1	100%	1	1
MSCPAC	455	442	95%	432	420
NAVMTO	6	0	100%	6	0
NAVSEA	2	0	0%	0	0
Navy Audit	1	0	100%	1	0
Navy Exchange	5	3	100%	5	3
NCIS	9	0	100%	9	0
NEX Fit Asst Team	0	0	0%	0	0
NRPEO	42	54	100%	42	54
NTCC	37	20	100%	37	20
Post Office	1	1	100%	1	1
PWCSFB	976	290	90%	878	261
ROICC	0	16	100%	0	16
VOA	156	73	50%	78	37
USNS A.J. Higgins*	117	58	100%	117	58
USNS Kawishiwi*	127	63	100%	127	63
USNS Mercy*	106	52	100%	106	52
USNS Observation*	60	30	100%	60	30
USS Kansas City*	479	236	100%	479	236
USS Wichita*	479	236	100%	479	236
USS class*	479	236	100%	479	236
USS class*	479	236	100%	479	236
TOTAL	5,591	2,614		5,327	2,522

* 1996 employment per ship in port was based on average reductions for all ships served.

SOURCES: Personnel Data from Marty Wolf of Radian International, Sacramento, and Ed Guldner of FISCO on June 19, 1996.

Table J.1-2

FISCO/Port Vision 2000 EIS/EIR
Trip Generation for FISCO

FISCO Access Location	Employees	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Maritime/7th Extension Non-Truck Traffic		522	111	633	117	319	436
Middle Harbor/Gate 2 Total Traffic		414	128		261	449	
% Non-Trucks		87%	43%		23%	78%	
Non-Truck Traffic		360	55	415	60	350	410
Total Non-Truck Traffic		882	166	1,048	177	669	846
Employees FISCO							
Lease Areas 1, 2, & 3	92						
Lease Areas 4 & 5	<u>2,522</u>						
Total	2,614						
Port - Lease Areas 1-3	<u>500</u>						
Total Employees	3,114						
Trips per Employee		0.28	0.05	0.33	0.06	0.21	0.27
ITE Trip Generation Military Base (ITE 501)		-	-	0.39	-	-	0.39

Table J.1-3

FISCO/Port Vision 2000 EIS/EIR
VEHICLE TYPES
GATE 2 - FISCO ACCESS AT MIDDLE HARBOR ROAD

Hour Beginning	Inbound						Outbound					
	Cars, Pickups & Motorcycles	Single Unit Trucks & Buses	Single Trailer Trucks	Multi- Trailer Trucks	Total Heavy Vehicles	Total	Cars, Pickups & Motorcycles	Single Unit Trucks & Buses	Single Trailer Trucks	Multi- Trailer Trucks	Total Heavy Vehicles	Total
7:00	309	35	11	1	47	356	44	34	23	1	58	102
8:00	182	40	43	0	83	265	56	88	34	1	123	179
9:00	97	46	81	1	128	225	85	108	53	0	161	246
10:00	121	57	70	2	129	250	89	51	59	4	114	203
16:00	39	70	63	1	134	173	270	28	47	0	75	345

Traffic counts collected on June 6, 1996, by Wiltec.

Table J.1-4

**FISCO/Port Vision 2000 EIS/EIR
VEHICLE PERCENTAGES
GATE 2 - FISCO ACCESS AT MIDDLE HARBOR ROAD**

Period	Inbound					Outbound				
	Cars, Pickups & Motorcycles	Single Unit Trucks & Buses	Single Trailer Trucks	Multi- Trailer Trucks	Total Heavy Vehicles	Cars, Pickups & Motorcycles	Single Unit Trucks & Buses	Single Trailer Trucks	Multi- Trailer Trucks	Total Heavy Vehicles
07:00 - 08:00	87%	10%	3%	0%	13%	43%	33%	23%	1%	57%
08:00 - 09:00	69%	15%	16%	0%	31%	31%	49%	19%	1%	69%
09:00 - 10:00	43%	20%	36%	0%	57%	35%	44%	22%	0%	65%
10:00 - 11:00	48%	23%	28%	1%	52%	44%	25%	29%	2%	56%
16:00 - 17:00	23%	40%	36%	1%	77%	78%	8%	14%	0%	22%

Traffic counts collected on June 6, 1996, by Wiltec.

Table J.1-5
FISCO Employee Trip Distribution

Location	Residency	Commute Mode			Auto Factor	Auto Trips		Route	% of Employees Served by Each Route				Local	
		Solo	Carpool	Other		Number	%		I-80 E.	I-80 W.	Rt. 24	I-880		I-580 E.
N. Alameda (Oakland)	313	74.6%	9.8%	12.4%	79.2%	248	34.1%							
S. Alameda (Hayward, Fremont)	119	78.6%	14.3%	7.1%	85.3%	101	14.0%	I-580 E.						14.0%
E. Alameda (Pleasanton, Livermore)	10	80.0%	20.0%	0.0%	89.3%	9	1.2%	I-580 E.						1.2%
E. Contra Costa (I-680)	86	80.5%	15.9%	3.7%	87.9%	76	10.4%	Rt. 24			10.4%			
W. Contra Costa (Richmond, I-80)	107	79.2%	17.0%	3.8%	87.1%	93	12.8%	I-80 E.	12.8%					
Santa Clara County	15	73.3%	26.7%	0.0%	85.8%	13	1.8%	I-880		6.4%		1.8%		
San Francisco, San Mateo Counties	58	76.8%	7.1%	16.1%	80.1%	46	6.4%	I-80 W.						
Marin and Sonoma Counties	14	100.0%	0.0%	0.0%	100.0%	14	1.9%	I-80 E.	1.9%					
Solano, Napa, Yolo, Sacto Counties	136	64.9%	33.6%	0.7%	80.6%	110	15.1%	I-80 E.	15.1%					
San Joaquin Valley & Outlying	17	87.5%	12.5%	0.0%	93.3%	16	2.2%	I-580 E.						2.2%
Total	875					726	100.0%							
Oakland Details (from Truck Survey)														
Civic Center	11						1.2%	I-880				1.2%		
Dimond	15						1.7%	I-580 E.					1.7%	
Elmwood	72						8.1%	I-880				8.1%		
Fruitvale	69						7.7%	I-880				7.7%		
Grand Lake	3						0.3%	Local						0.3%
Laurel	4						0.4%	Local						0.4%
Mills College	2						0.2%	Local						0.2%
North Oakland	17						1.9%	Local						1.9%
San Antonio	71						7.9%	Local						7.9%
West Oakland	41						4.6%	Local						4.6%
Subtotal %	305						34.1%							
Total %									30%	6%	10%	19%	19%	15%

SOURCES:

Fleet & Industrial Supply Center (158-1) employee Transportation Survey Results (BAAQMD, 1994)
Truck Survey - Marine Terminals and Railroad Intermodal Yards (Port of Oakland, 1993).

**Table J.1-6
Port of Oakland Employee Trip Distribution**

Location	Residency		Route	% of Employees Served by Each Route					
	Number	%		I-80 E.	I-80 W.	Rt. 24	I-880	I-580 E.	Local
Oakland (see details below)	369	27.4%							
Alameda	24	1.8%	Local						1.8%
Berkeley/Albany/Emeryville	22	1.6%	I-80 E.	1.6%					
San Leandro/San Lorenzo	89	6.6%	I-880				6.6%		
Piedmont	1	0.1%	I-580 E.					0.1%	
Hayward/Castro Valley	116	8.6%	I-580 E.					8.6%	
Fremont/Newark	38	2.8%	I-880				2.8%		
Union City	23	1.7%	I-880				1.7%		
Dublin/Livermore/Pleasanton	13	1.0%	I-580 E.					1.0%	
San Pablo/Pinole/Rodeo	43	3.2%	I-80 E.	3.2%					
Richmond	45	3.3%	I-80 E.	3.3%					
El Cerrito	5	0.4%	I-80 E.	0.4%					
Pittsburg/Antioch	28	2.1%	Rt. 24			2.1%			
Martinez/Concord	28	2.1%	Rt. 24			2.1%			
Walnut Creek/Orinda/Lafayette	8	0.6%	Rt. 24			0.6%			
Alamo/Danville/San Ramon	5	0.4%	Rt. 24			0.4%			
San Francisco	111	8.3%	I-80 W.		8.3%				
San Francisco Longshore *	112	8.3%	I-80 W.		8.3%				
San Mateo County	80	5.9%	I-80 W.		5.9%				
Santa Clara County	67	5.0%	I-880				5.0%		
Marin County	15	1.1%	I-80 E.	1.1%					
Napa/Sonoma Counties	20	1.5%	I-80 E.	1.5%					
Solano County	83	6.2%	I-80 E.	6.2%					
Total	1345	100.0%							
Oakland Details									
Civic Center	11	1.0%	I-880				1.0%		
Dimond	15	1.3%	I-580 E.					1.3%	
Elmwood	72	6.5%	I-880				6.5%		
Fruitvale	69	6.2%	I-880				6.2%		
Grand Lake	3	0.3%	Local						0.3%
Laurel	4	0.4%	Local						0.4%
Mills College	2	0.2%	Local						0.2%
North Oakland	17	1.5%	Local						1.5%
San Antonio	71	6.4%	Local						6.4%
West Oakland	41	3.7%	Local						3.7%
Subtotal %	305	27.4%							
Total %				17%	23%	5%	30%	11%	14%

* Added to show the effects of longshore workers who must report to the union hall in San Francisco before going to the Port. (Half of longshore workers typically report to San Francisco).

SOURCES:

1. *Truck Survey - Marine Terminals and Railroad Intermodal Yards* (Port of Oakland, 1993).
2. *Port of Oakland Maritime Economic Impact Study* (1990).
3. Meeting on June 14, 1996: Anne Whittington, Senior Port Strategic Planner (Economics), David Adams, Port Chief Warfinger, and Mark Bowman, Dowling Associates.

**Table J.1-7
Truck Trips**

Location	Residency		Inbound		Outbound		Route
	Number	%	Number	%	Number	%	
Oakland (see details below)	369	22.1%	489	32.4%	403	29.0%	
Alameda	24	1.4%	5	0.3%	6	0.4%	Local
Berkeley/Albany/Emeryville	22	1.3%	7	0.5%	8	0.6%	I-80 E.
Lan Leandro/San Lorenzo	89	5.3%	55	3.6%	48	3.5%	I-880 S.
Piedmont	1	0.1%		0.0%		0.0%	Local
Hayward/Castro Valley	116	6.9%	52	3.5%	43	3.1%	I-880/238
Fremont/Newark	38	2.3%	22	1.5%	13	0.9%	I-880 S.
Union City	23	1.4%	18	1.2%	25	1.8%	I-880 S.
Dublin/Livermore/Pleasanton	13	0.8%	2	0.1%	3	0.2%	I-880/238
San Pablo/Pinole/Rodeo	43	2.6%	14	0.9%	3	0.2%	I-80 E.
Richmond	45	2.7%	117	7.8%	92	6.6%	I-80 E.
El Cerrito	5	0.3%		0.0%		0.0%	I-80 E.
Pittsburg/Antioch	28	1.7%	7	0.5%	12	0.9%	Rt. 24
Martinez/Concord	28	1.7%	12	0.8%	8	0.6%	Rt. 24
Walnut Creek/Orinda/Lafayette	8	0.5%		0.0%		0.0%	Rt. 24
Alamo/Danville/San Ramon	5	0.3%	4	0.3%	1	0.1%	Rt. 24
San Francisco	111	6.6%	89	5.9%	76	5.5%	I-80 W.
San Mateo County	80	4.8%	36	2.4%	21	1.5%	I-80 W.
Santa Clara County	67	4.0%	80	5.3%	56	4.0%	I-880 S.
Marin County	15	0.9%	4	0.3%	4	0.3%	I-80 E.
Napa/Sonoma Counties	20	1.2%	14	0.9%	20	1.4%	I-80 E.
Solano County	83	5.0%	38	2.5%	23	1.7%	I-80 E.
Sacramento Area		0.0%	100	6.6%	65	4.7%	I-80 E.
San Joaquin/Stanislaus		0.0%	127	8.4%	100	7.2%	I-880/238
Fresno/Merced/Madera		0.0%	88	5.8%	76	5.5%	I-880/238
Kern/Kings/Tulare		0.0%	12	0.8%	8	0.6%	I-880/238
Santa Cruz County		0.0%	2	0.1%	5	0.4%	I-880 S.
Other California	375	22.4%	56	3.7%	49	3.5%	
Other States	59	3.5%	53	3.5%	48	3.5%	
Unknown	4	0.2%	4	0.3%	174	12.5%	
Total	1671	100.0%	1507	100.0%	1390	100.0%	
Oakland Details							
Civic Center	11	0.8%	18	1.2%	15	1.0%	I-880
Dimond	15	1.1%	24	1.6%	20	1.4%	I-880
Elmwood	72	5.2%	115	7.7%	95	6.8%	I-880
Fruitvale	69	5.0%	111	7.3%	91	6.6%	I-880
Grand Lake	3	0.2%	5	0.3%	4	0.3%	Local
Laurel	4	0.3%	6	0.4%	5	0.4%	Local
Mills College	2	0.1%	3	0.2%	3	0.2%	Local
North Oakland	17	1.2%	27	1.8%	22	1.6%	Local
San Antonio	71	5.1%	114	7.6%	94	6.7%	Local
West Oakland	41	3.0%	66	4.4%	54	3.9%	Local
Subtotal	305	22.1%	489	32.4%	403	29.0%	

SOURCE: Truck Survey - Marine Terminals and Railroad Intermodal Yards (Port of Oakland, March/April 1993)

Table J.1-8
Truck Routes

Location	Inbound Trips							Outbound Trips						
	I-80 E.	I-80 W.	Rt. 24	I-880	I-880/238	I-880 S.	Local	I-80 E.	I-80 W.	Rt. 24	I-880	I-880/238	I-880 S.	Local
Oakland (see details below)							5							6
Alameda														
Berkeley/Albany/Emeryville	7							8						
Lan Leandro/San Lorenzo						55							48	
Piedmont							0							0
Hayward/Castro Valley					52							43		
Fremont/Newark						22							13	
Union City						18							25	
Dublin/Livermore/Pleasanton					2							3		
San Pablo/Pinole/Rodeo	14							3						
Richmond	117							92						
El Cerrito	0							0						
Pittsburg/Antioch			7							12				
Martinez/Concord			12							8				
Walnut Creek/Orinda/Lafayette			0							0				
Alamo/Danville/San Ramon			4							1				
San Francisco		89							76					
San Mateo County		36							21					
Santa Clara County						80							56	
Marin County	4							4						
Napa/Sonoma Counties	14							20						
Solano County	38							23						
Sacramento Area	100							65						
San Joaquin/Stanislaus					127							100		
Fresno/Merced/Madera					88							76		
Kern/Kings/Tulare					12							8		
Santa Cruz County						2							5	
Other California														
Other States														
Unknown														
Oakland Details														
Civic Center				18							15			
Dimond				24							20			
Elmwood				115							95			
Fruitvale				111							91			
Grand Lake							5							4
Laurel							6							5
Mills College							3							3
North Oakland							27							22
San Antonio							114							94
West Oakland							66							54
Total Inbound/Outbound Trips														
% of Total I/O Trips														
% of Total Trips (In & Out)														

SOURCE: Truck Survey - Marine Terminals and Railroad Intermodal Yards (Port of Oakland, March/April 1993)

Table J.1-9

EXIST-AM.CMD Fri Nov 1, 1996 15:46:20 Page 1-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
AM Peak Hour

Trip Generation Report

Forecast for AM Peak Hour

Zone #	Subzone	Amount Units	Rate		Trips		Total # Of	
			In	Out	In	Out	Trips	Trips Total
1	FISCO Areas	2805.00 Employees '90	0.28	0.05	785	140	925	100.0
	Zone 1 Subtotal				785	140	925	100.0
TOTAL								
					785	140	925	100.0

Table J.1-9

EXIST-AM.CMD Fri Nov 1, 1996 15:46:20 Page 2-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
AM Peak Hour

Trip Distribution Report

Percent Of Trips Existing

Zone	To Gates			
	11	12	13	14
1	30.0	7.0	10.0	19.0
				15.0

Table J.1-9 (Continued)

EXIST-AM.CMD Fri Nov 1, 1996 15:46:20 Page 3-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
AM Peak Hour

Turning Movement Report
AM Peak Hour

Volume Type	Northbound	Southbound	Eastbound	Westbound	Total
	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right Volume
#1 Maritime St./ W. Grand WB Ramps					
Base	260 5 0 0 5	5 0 0 0 0	0 0 0 0 0	425 490 5	1195
Added	52 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0	52
Total	312 5 0 0 5	5 0 0 0 0	0 0 0 0 0	425 490 5	1247
#2 Maritime St./ W. Grand EB Ramps					
Base	0 260 90 5 425	0 5 300 615	0 0 0 0 0	0 0 0	1700
Added	0 52 0 0 0	0 0 0 290 0	0 0 0 0 0	0 0 0	342
Total	0 312 90 5 425	0 5 300 905	0 0 0 0 0	0 0 0	2042
#3 Maritime St./ Burma St.					
Base	5 340 0 0 625	200 0 5 0 0	0 0 0 0 0	0 0 0	1195
Added	0 52 0 0 290	0 0 0 0 0	0 0 0 0 0	0 0 0	342
Total	5 392 0 0 915	200 0 5 0 0	0 0 0 0 0	0 0 0	1537
#4 Maritime St./ 14th St.					
Base	28 238 39 103 463	14 15 0 11 22	0 0 0 0 0	87 1020	
Added	0 52 0 0 290	0 0 0 0 0	0 0 0 0 0	0 0 0	342
Total	28 290 39 103 753	14 15 0 11 22	0 0 0 0 0	87 1362	
#5 Maritime St./ 7th St. Extension					
Base	184 340 0 0 205	338 70 0 41 0	0 0 0 0 0	0 1178	
Added	0 0 0 0 290	52 0 0 0 0	0 0 0 0 0	0 342	
Total	184 340 0 0 205	628 122 0 41 0	0 0 0 0 0	0 1520	
#6 7th St./ 7th St. Extension					
Base	38 62 18 129 95	4 13 16 1 87	199 372 1034		
Added	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0		
Total	38 62 18 129 95	4 13 16 1 87	199 372 1034		
#7 Middle Harbor Rd./ Gate 2 Connection					
Base	55 0 73 0 0	0 0 184 49 365	555 0 1281		
Added	0 0 88 0 0	0 0 0 0 495	0 0 583		
Total	55 0 161 0 0	0 0 184 49 860	555 0 1864		
#8 Adeline St./ 3rd St.					
Base	8 60 31 26 308	26 8 6 29 322	59 56 939		
Added	0 35 53 0 495	0 0 0 0 0	0 0 583		
Total	8 95 84 26 803	26 8 6 29 322	59 56 1522		

J.1-13

Table J.1-9 (Continued)

EXIST-AM.CMD	Fri Nov 1, 1996 15:46:20	Page 4-1	Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 BIS/EIR			
Existing Conditions			
AM Peak Hour			

Impact Analysis Report			
Level Of Service			

Intersection	Base Del/ V/ LOS Veh C	Future Del/ V/ LOS Veh C	Change in
# 1 Maritime St./ W. Grand WB Ramp	B 9.1 0.501	B 10.4 0.536	+ 1.251 D/V
# 2 Maritime St./ W. Grand EB Ramp	B 13.5 0.744	D 25.1 0.964	+11.637 D/V
# 3 Maritime St./ Burma St.	A 0.9 0.314	A 0.8 0.414	-0.116 D/V
# 4 Maritime St./ 14th St.	B 10.2 0.252	B 7.7 0.352	-2.445 D/V
# 5 Maritime St./ 7th St. Extension	B 8.8 0.455	B 11.1 0.726	+ 2.312 D/V
# 6 7th St./ 7th St. Extension	B 11.9 0.431	B 11.9 0.431	+ 0.000 D/V
# 7 Middle Harbor Rd./ Gate 2 Conn	B 8.5 0.392	B 13.1 0.803	+ 4.645 D/V
# 8 Adeline St./ 3rd St.	C 15.3 0.423	C 17.1 0.634	+ 1.757 D/V

EXIST-AM.CMD Fri Nov 1, 1996 15:46:20 Page 5-1
 FISCO/Port Vision 2000 EIS/EIR
 Existing Conditions
 AM Peak Hour

Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

Level Of Service Computation Report												
1994 HCM Operations Method (Future Volume Alternative)												

Intersection #1 Maritime St./ W. Grand WB Ramps												

Cycle (sec):	100	Critical Vol./Cap. (X):				0.536						
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):				10.4						
Optimal Cycle:	49	Level Of Service:				B						

Approach:	North Bound	South Bound	East Bound	West Bound								
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
Lanes:	1 0 1	0 0 0	0 0 1	0 1 0	0 0 0	0 0 0	0 0 0	0 0 0	1 0 0	1 0 0	1 0 0	

Volume Module:												
Base Vol:	260	5	0	0	5	5	0	0	0	425	490	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	260	5	0	0	5	5	0	0	0	425	490	5
Added Vol:	52	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	312	5	0	0	5	5	0	0	0	425	490	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	312	5	0	0	5	5	0	0	0	425	490	5
Reduc Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	312	5	0	0	5	5	0	0	0	425	490	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	312	5	0	0	5	5	0	0	0	425	490	5

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	0.81	1.00	1.00	0.81	0.69	1.00	1.00	1.00	0.81	0.81	0.81
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.99	0.01
Final Sat.:	1467	1545	0	0	1545	1313	0	0	0	1545	1529	16

Capacity Analysis Module:												
Vol/Sat:	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.32	0.32
Crit Moves:	****											
Green/Cycle:	0.40	0.40	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.60	0.60	0.60
Volume/Cap:	0.54	0.01	0.00	0.00	0.54	0.63	0.00	0.00	0.00	0.46	0.54	0.54

Level Of Service Module:												
Delay/Veh:	15.7	11.6	0.0	0.0	62.0	88.4	0.0	0.0	0.0	7.5	8.2	8.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.7	11.6	0.0	0.0	62.0	88.4	0.0	0.0	0.0	7.5	8.2	8.2
Queue:	7	0	0	0	0	0	0	0	0	7	8	0

Table J.1-9 (Continued)

EXIST-AM.CMD Fri Nov 1, 1996 15:46:20 Page 6-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR Existing Conditions AM Peak Hour									
Level Of Service Computation Report									
1994 HCM Operations Method (Future Volume Alternative)									

Intersection #2 Maritime St./ W. Grand EB Ramps									

Cycle (sec):	100					Critical Vol./Cap. (X):	0.964		
Loss Time (sec):	0 (Y+R = 4 sec)					Average Delay (sec/veh):	25.1		
Optimal Cycle:	180					Level Of Service:	D		

Approach:	North Bound	South Bound	East Bound	West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R					
Control: Protected Include Protected Include Protected Include Protected Include									
Rights: Protected Include Protected Include Protected Include Protected Include									
Min. Green:	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1	0	1	0	1	0	1
Volume Module:									
Base Vol:	0	260	90	5	425	0	5	300	615
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	260	90	5	425	0	5	300	615
Added Vol:	0	52	0	0	0	0	0	290	0
PasserByVol:	0	0	0	0	0	0	0	0	0
Initial Fut:	0	312	90	5	425	0	5	300	905
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	312	90	5	425	0	5	300	905
Reduct Vol:	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	312	90	5	425	0	5	300	905
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	327	95	5	425	0	5	300	905
Saturation Flow Module:									
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.79	0.79	0.77	0.81	1.00	0.69	0.81	0.69
Lanes:	0.00	1.55	0.45	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	0	2322	675	1467	1545	0	1313	1545	1313
Capacity Analysis Module:									
Vol/Sat:	0.00	0.14	0.14	0.00	0.28	0.00	0.00	0.19	0.69
Crit Moves:	****			****			****		
Green/Cycle:	0.00	0.28	0.28	0.01	0.29	0.00	0.71	0.71	0.71
Volume/Cap:	0.00	0.51	0.51	0.51	0.96	0.00	0.01	0.27	0.96
Level Of Service Module:									
Delay/Veh:	0.0	20.0	20.0	55.7	47.7	0.0	2.6	3.3	24.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	20.0	20.0	55.7	47.7	0.0	2.6	3.3	24.1
Queue:	0	8	2	0	16	0	0	3	28

Table J.1-9 (Continued)

Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

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Fri Nov 1, 1996 15:46:20

EXIST-AM.CMD

FISCO/Port Vision 2000 EIS/EIR

Existing Conditions

AM Peak Hour

Level Of Service Computation Report											
1994 HCM Operations Method (Future Volume Alternative)											
Intersection #3 Maritime St./ Burma St.											
Cycle (sec):	100									Critical Vol./Cap. (X):	0.414
Loss Time (sec):	0	(Y+R = 4 sec)								Average Delay (sec/veh):	0.8
Optimal Cycle:	39									Level Of Service:	A
Approach: North Bound South Bound East Bound West Bound											
Movement: L - T - R L - T - R L - T - R L - T - R											
Control: Protected Protected Protected Protected Protected Protected											
Rights: Include Include Include Include Include Include											
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0											
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 0 0 0 0 0											
Volume Module:											
Base Vol:	5	340	0	0	625	200	20	0	5	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	340	0	0	625	200	20	0	5	0	0
Added Vol:	0	52	0	0	290	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	392	0	0	915	200	20	0	5	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	392	0	0	915	200	20	0	5	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	392	0	0	915	200	20	0	5	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00
Final Vol:	5	411	0	0	961	210	20	0	5	0	0
Saturation Flow Module:											
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	0.80	1.00	1.00	0.78	0.78	0.76	1.00	0.68	1.00	1.00
Lanes:	1.00	2.00	0.00	1.00	1.64	0.36	1.00	0.00	1.00	0.00	0.00
Final Sat:	1444	3040	0	1900	2420	529	1444	0	1292	0	0
Capacity Analysis Module:											
Vol/Sat:	0.00	0.14	0.00	0.00	0.40	0.40	0.01	0.00	0.00	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.01	0.97	0.00	0.00	0.96	0.96	0.03	0.00	0.03	0.00	0.00
Volume/Cap:	0.41	0.14	0.00	0.00	0.41	0.41	0.41	0.00	0.12	0.00	0.00
Level Of Service Module:											
Delay/Veh:	42.5	0.0	0.0	0.0	0.2	0.2	33.8	0.0	30.3	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.5	0.0	0.0	0.0	0.2	0.2	33.8	0.0	30.3	0.0	0.0
Queue:	0	0	0	0	2	0	1	0	0	0	0

Table J.1-9 (Continued)

Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

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Fri Nov 1, 1996 15:46:20

EXIST-AM.CMD

FISCO/Port Vision 2000 EIS/EIR

Existing Conditions

AM Peak Hour

Level Of Service Computation Report

1994 HCM Operations Method (Future Volume Alternative)

Intersection #4 Maritime St./ 14th St.

Cycle (sec): 100 Critical Vol./Cap. (X): 0.352

Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 7.7

Optimal Cycle: 29 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Permitted Permitted

Rights: Include Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 1 0 1 1 0 1 0 1 1 0 0 0 1 1 0 0 1 0 1 0

Volume Module:

Base Vol: 28 238 39 103 463 14 15 0 11 22 0 87

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 28 238 39 103 463 14 15 0 11 22 0 87

Added Vol: 0 52 0 0 290 0 0 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 28 290 39 103 753 14 15 0 11 22 0 87

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 28 290 39 103 753 14 15 0 11 22 0 87

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 28 290 39 103 753 14 15 0 11 22 0 87

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.05 1.05 1.00 1.05 1.05 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 28 304 41 103 791 15 15 0 11 22 0 87

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.76 0.78 0.78 0.76 0.80 0.80 0.58 1.00 0.58 0.74 1.00 0.58

Lanes: 1.00 1.76 0.24 1.00 1.96 0.04 0.58 0.00 0.42 1.00 0.00 1.00

Final Sat.: 1444 2625 354 1444 2983 57 641 0 470 1414 0 1292

Capacity Analysis Module:

Vol/Sat: 0.02 0.12 0.12 0.07 0.27 0.27 0.02 0.00 0.02 0.02 0.00 0.07

Crit Moves: ****

Green/Cycle: 0.06 0.50 0.50 0.31 0.75 0.75 0.19 0.00 0.19 0.19 0.00 0.19

Volume/Cap: 0.35 0.23 0.23 0.23 0.35 0.35 0.12 0.00 0.12 0.08 0.00 0.35

Level Of Service Module:

Delay/Veh: 30.5 9.1 9.1 16.7 2.7 2.7 21.6 0.0 21.6 21.5 0.0 23.0

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 30.5 9.1 9.1 16.7 2.7 2.7 21.6 0.0 21.6 21.5 0.0 23.0

Queue: 1 5 1 2 7 0 0 0 0 0 1 0 2

FISCO/Port Vision 2000 EIS/EIR									
Existing Conditions									
AM Peak Hour									
Level Of Service Computation Report									
1994 HCM Operations Method (Future Volume Alternative)									
Intersection #5 Maritime St./ 7th St. Extension									
Cycle (sec):	100							Critical Vol./Cap. (X):	0.726
Loss Time (sec):	0 (Y+R = 4 sec)							Average Delay (sec/veh):	11.1
Optimal Cycle:	83							Level Of Service:	B
Approach: North Bound South Bound East Bound West Bound									
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	0	0	1	0	0
Volume Module:									
Base Vol:	184	340	0	0	205	338	70	0	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	184	340	0	0	205	338	70	0	41
Added Vol:	0	0	0	0	0	290	52	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0
Initial Fut:	184	340	0	0	205	628	122	0	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	184	340	0	0	205	628	122	0	41
Reduced Vol:	0	0	0	0	0	0	0	0	0
Reduced Vol:	184	340	0	0	205	628	122	0	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol:	184	357	0	0	205	628	122	0	41
Saturation Flow Module:									
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.73	0.77	1.00	1.00	0.77	0.65	0.73	1.00	0.65
Lanes:	1.00	2.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00
Final Sat:	1388	2923	0	0	1462	1242	1388	0	1242
Capacity Analysis Module:									
Vol/Sat:	0.13	0.12	0.00	0.00	0.14	0.51	0.09	0.00	0.03
Crit Moves:	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.18	0.88	0.00	0.00	0.70	0.70	0.12	0.00	0.00
Volume/Cap:	0.73	0.14	0.00	0.00	0.20	0.73	0.00	0.27	0.00
Level Of Service Module:									
Delay/Veh:	31.6	0.5	0.0	0.0	3.5	7.7	37.0	0.0	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.6	0.5	0.0	0.0	3.5	7.7	37.0	0.0	26.1
Queue:	5	1	0	0	2	11	4	0	1

Table J.1-9 (Continued)

Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

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Fri Nov 1, 1996 15:46:20

EXIST-AM.CMD

FISCO/Port Vision 2000 EIS/EIR

Existing Conditions

AM Peak Hour

Level Of Service Computation Report												
1994 HCM Operations Method (Future Volume Alternative)												
Intersection #6 7th St./ 7th St. Extension												
Cycle (sec):	100	Critical Vol./Cap. (X): 0.431										
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh): 11.9										
Optimal Cycle:	40	Level Of Service: B										
Approach: North Bound South Bound East Bound West Bound												
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	1	0	1	0	1	0	2	0
Volume Module:												
Base Vol:	38	62	18	129	95	4	13	16	1	87	199	372
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	62	18	129	95	4	13	16	1	87	199	372
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	38	62	18	129	95	4	13	16	1	87	199	372
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	38	62	18	129	95	4	13	16	1	87	199	372
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	62	18	129	95	4	13	16	1	87	199	372
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.10	1.10	1.00	1.05	1.00
Final Vol:	38	65	19	129	100	4	13	18	1	87	209	372
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.73	0.75	0.75	0.73	0.76	0.76	0.73	0.76	0.76	0.73	0.77	0.65
Lanes:	1.00	1.55	0.45	1.00	1.92	0.08	1.00	2.84	0.16	1.00	2.00	1.00
Final Sat:	1388	2194	641	1388	2783	111	1388	4112	228	1388	2923	1242
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.09	0.04	0.04	0.01	0.00	0.00	0.06	0.07	0.30
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.12	0.07	0.07	0.22	0.16	0.16	0.02	0.05	0.05	0.67	0.69	0.69
Volume/Cap:	0.22	0.43	0.43	0.43	0.22	0.22	0.43	0.09	0.09	0.09	0.10	0.43
Level Of Service Module:												
Delay/Veh:	25.7	29.8	29.8	22.6	23.6	23.6	36.8	29.5	29.5	3.8	3.3	4.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.7	29.8	29.8	22.6	23.6	23.6	36.8	29.5	29.5	3.8	3.3	4.5
Queue:	1	2	1	3	2	0	0	0	0	1	2	5

Table J.1-9 (Continued)

EXIST-AM.CMD Fri Nov 1, 1996 15:46:20 Page 11-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 BIS/EIR
Existing Conditions
AM Peak Hour

Level Of Service Computation Report									
1994 HCM Operations Method (Future Volume Alternative)									
Intersection #7 Middle Harbor Rd./ Gate 2 Connection									
Cycle (sec):	100					Critical Vol./Cap. (X):		0.803	
Loss Time (sec):	0 (Y+R = 4 sec)					Average Delay (sec/veh):		13.1	
Optimal Cycle:	116					Level Of Service:		B	
Approach: North Bound South Bound East Bound West Bound									
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 0 0 1	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0
Volume Module:									
Base Vol:	55	0	73	0	0	0	184	49	365 555
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.00 1.00
Initial Bse:	55	0	73	0	0	0	184	49	365 555
Added Vol:	0	0	88	0	0	0	0	0	0 495 0
PasserByVol:	0	0	0	0	0	0	0	0	0 0 0
Initial Fut:	55	0	161	0	0	0	184	49	860 555
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.00 1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.00 1.00
PHF Volume:	55	0	161	0	0	0	184	49	860 555
Reduct Vol:	0	0	0	0	0	0	0	0	0 0 0
Reduced Vol:	55	0	161	0	0	0	184	49	860 555
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.00 1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.00 1.00
Final Vol:	55	0	161	0	0	0	193	51	860 583
Saturation Flow Module:									
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900 1900
Adjustment:	0.76	1.00	0.68	1.00	1.00	1.00	0.78	0.78	0.76 0.80 1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	1.58	0.42	1.00 2.00 0.00
Final Sat:	1444	0	1292	0	0	0	2332	616	1444 3040
Capacity Analysis Module:									
Vol/Sat:	0.04	0.00	0.12	0.00	0.00	0.00	0.08	0.08	0.60 0.19 0.00
Crit Moves:	***	***	***	***	***	***	***	***	***
Green/Cycle:	0.16	0.00	0.16	0.00	0.00	0.00	0.10	0.10	0.74 0.84 0.00
Volume/Cap:	0.25	0.00	0.80	0.00	0.00	0.00	0.80	0.80	0.80 0.23 0.00
Level Of Service Module:									
Delay/Veh:	24.1	0.0	40.1	0.0	0.0	0.0	38.1	38.1	8.5 1.0 0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00 1.00 1.00
AdjDel/Veh:	24.1	0.0	40.1	0.0	0.0	0.0	38.1	38.1	8.5 1.0 0.0
Queue:	1	0	5	0	0	0	6	2	16 3 0

Table J.1-9 (Continued)

Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

EXIST-AM.CMD	Fri Nov 1, 1996 15:46:20	Page 12-1

FISCO/Port Vision 2000 EIS/EIR		
Existing Conditions		
AM Peak Hour		

Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		

Intersection #8 Adeline St./ 3rd St.		

Cycle (sec):	100	Critical Vol./Cap. (X): 0.634
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh): 17.1
Optimal Cycle:	62	Level Of Service: C

Approach:	North Bound	South Bound
Movement:	L - T - R	L - T - R
Control:	Split Phase	Split Phase
Rights:	Include	Include
Min. Green:	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes:	0 1 0 1 0 0 1 0 1 0 0 1 0 1 0 1 0	0 1 0 1 0 0 1 0 1 0 0 1 0 1 0 1 0

Volume Module:		
Base Vol:	8 60 31 26 308 26 8 6 29 322 59 56	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	8 60 31 26 308 26 8 6 29 322 59 56	
Added Vol:	0 35 53 0 0 495 0 0 0 0 0 0 0	
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut:	8 95 84 26 803 26 8 6 29 322 59 56	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	8 95 84 26 803 26 8 6 29 322 59 56	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	8 95 84 26 803 26 8 6 29 322 59 56	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.05 1.05 1.05 1.05 1.05 1.05 1.00 1.00 1.00 1.00 1.00 1.00	
Final Vol.:	8 100 88 27 843 27 8 6 29 322 59 56	

Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	0.72 0.72 0.72 0.77 0.77 0.77 0.75 0.75 0.65 0.73 0.72 0.72	
Lanes:	0.08 1.02 0.90 0.06 1.88 0.06 0.57 0.43 1.00 1.00 0.51 0.49	
Final Sat.:	111 1387 1221 88 2747 88 810 608 1242 1388 697 662	

Capacity Analysis Module:		
Vol/Sat:	0.07 0.07 0.07 0.31 0.31 0.31 0.01 0.01 0.02 0.23 0.08 0.08	
Crit Moves:	****	****
Green/Cycle:	0.11 0.11 0.11 0.48 0.48 0.48 0.04 0.04 0.04 0.37 0.37 0.37	
Volume/Cap:	0.63 0.63 0.63 0.63 0.63 0.63 0.27 0.27 0.63 0.63 0.23 0.23	

Level Of Service Module:		
Delay/Veh:	30.3 30.3 30.3 13.1 13.1 13.1 30.5 30.5 42.3 18.3 14.2 14.2	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	30.3 30.3 30.3 13.1 13.1 13.1 30.5 30.5 42.3 18.3 14.2 14.2	
Queue:	0 3 3 1 18 1 0 0 1 8 1 1	

Table J.1-9 (Continued)

EXIST-PM.CMD Fri Nov 1, 1996 15:45:58 Page 1-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
PM Peak Hour

Trip Generation Report

Forecast for PM Peak Hour

Zone #	Subzone	Amount Units	Rate		Trips		Total # Of Trips Total
			In	Out	In	Out	
1	FISCO Areas	2805.00	0.06	0.21	168	589	757 100.0
	Zone 1 Subtotal	.....	168	589	168	589	757 100.0

TOTAL		.....	168	589	168	589	757 100.0

Table J.1-9 (Continued)

EXIST-PM.CMD Fri Nov 1, 1996 15:45:58 Page 2-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
PM Peak Hour

Trip Distribution Report

Percent Of Trips Existing

Zone	To Gates					
	11	12	13	14	15	16
1	30.0	7.0	10.0	19.0	19.0	15.0

Table J.1-9 (Continued)

EXIST-PM.CMD

Fri Nov 1, 1996 15:45:58

Page 3-1

Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR

Existing Conditions

PM Peak Hour

Turning Movement Report

PM Peak Hour

Volume Type	Northbound	Southbound	Eastbound	Westbound	Total
	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume
#1 Maritime St./ W. Grand WB Ramps					
Base	820 10 0	0 10 5	0 0 0	95 490 0	5 1435
Added	218 0 0	0 0 0	0 0 0	0 0 0	0 218
Total	1038 10 0	0 10 5	0 0 0	95 490 0	5 1653
#2 Maritime St./ W. Grand EB Ramps					
Base	0 825 265	5 100 0	5 255 215	0 0 0	0 1670
Added	0 218 0	0 0 0	0 0 62	0 0 0	0 280
Total	0 1043 265	5 100 0	5 255 277	0 0 0	0 1950
#3 Maritime St./ Burma St.					
Base	5 905 0	0 320 5	185 0 50	0 0 0	0 1470
Added	0 218 0	0 62 0	0 0 0	0 0 0	0 280
Total	5 1123 0	0 382 5	185 0 50	0 0 0	0 1750
#4 Maritime St./ 14th St.					
Base	34 601 28	105 252 14	19 0 36	92 0 290	1471
Added	0 218 0	0 62 0	0 0 0	0 0 0	0 280
Total	34 819 28	105 314 14	19 0 36	92 0 290	1751
#5 Maritime St./ 7th St. Extension					
Base	41 365 0	0 380 76	226 0 93	0 0 0	0 1181
Added	0 0 0	0 0 62	218 0 0	0 0 0	0 280
Total	41 365 0	0 380 138	444 0 93	0 0 0	0 1461
#6 7th St./ 7th St. Extension					
Base	9 120 45	327 117 6	73 141 42	28 48 153	1109
Added	0 0 0	0 0 0	0 0 0	0 0 0	0 0
Total	9 120 45	327 117 6	73 141 42	28 48 153	1109
#7 Middle Harbor Rd./ Gate 2 Connection					
Base	102 0 347	0 0 0	0 421 133	128 257 0	1388
Added	0 0 371	0 0 0	0 0 0	106 0 0	477
Total	102 0 718	0 0 0	0 421 133	234 257 0	1865
#8 Adeline St./ 3rd St.					
Base	36 340 122	43 41 15	30 14 13	89 39 78	860
Added	0 147 224	0 106 0	0 0 0	0 0 0	477
Total	36 487 346	43 147 15	30 14 13	89 39 78	1337

J.1-25

Table J.1-9 (Continued)

EXIST-PM CMD Fri Nov 1, 1996 15:45:58 Page 4-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base Del/ V/ LOS Veh C	Future Del/ V/ LOS Veh C	Change in
# 1 Maritime St./ W. Grand WB Ramp	C 22.7 0.886	E 47.8 1.034	+25.048 D/V
# 2 Maritime St./ W. Grand EB Ramp	B 9.3 0.554	B 10.5 0.673	+ 1.157 D/V
# 3 Maritime St./ Burma St.	B 6.3 0.441	B 5.6 0.516	-0.638 D/V
# 4 Maritime St./ 14th St.	B 14.3 0.516	B 13.7 0.590	-0.641 D/V
# 5 Maritime St./ 7th St. Extension	B 10.7 0.361	B 13.3 0.543	+ 2.655 D/V
# 6 7th St./ 7th St. Extension	C 17.5 0.473	C 17.5 0.473	+ 0.000 D/V
# 7 Middle Harbor Rd./ Gate 2 Conn	B 14.7 0.557	D 28.4 0.917	+13.722 D/V
# 8 Adeline St./ 3rd St.	B 13.7 0.320	B 13.1 0.505	-0.601 D/V

Table J.1-9 (Continued)

EXIST-PM.CMD Fri Nov 1, 1996 15:45:58 Page 5-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
PM Peak Hour

Level Of Service Computation Report

1994 HCM Operations Method (Future Volume Alternative)

Intersection #1 Maritime St./ W. Grand WB Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.034
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 47.8
Optimal Cycle: 180 Level Of Service: E

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 0 1 0 1 0 0 1 0 1 0

Volume Module:
Base Vol: 820 10 0 0 10 5 0 0 0 95 490 5
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 820 10 0 0 10 5 0 0 0 95 490 5
Added Vol: 218 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 1038 10 0 0 10 5 0 0 0 95 490 5
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 1038 10 0 0 10 5 0 0 0 95 490 5
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 1038 10 0 0 10 5 0 0 0 95 490 5
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 1038 10 0 0 10 5 0 0 0 95 490 5

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.77 0.81 1.00 0.81 0.69 1.00 1.00 1.00 1.00 0.81 0.81 0.81
Lanes: 1.00 1.00 0.00 0.00 1.00 1.00 0.00 0.00 0.00 1.00 0.99 0.01
Final Sat.: 1467 1545 0 0 1545 1313 0 0 0 1545 1529 16

Capacity Analysis Module:
Vol/Sat: 0.71 0.01 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.06 0.32 0.32
Crit Moves: ****
Green/Cycle: 0.68 0.69 0.00 0.00 0.01 0.01 0.00 0.00 0.00 0.31 0.31 0.31
Volume/Cap: 1.03 0.01 0.00 0.00 1.03 0.61 0.00 0.00 0.00 0.20 1.03 1.03

Level Of Service Module:
Delay/Veh: 41.1 3.1 0.0 0.0 281 81.0 0.0 0.0 0.0 16.4 63.6 63.6
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 41.1 3.1 0.0 0.0 281 81.0 0.0 0.0 0.0 16.4 63.6 63.6
Queue: 42 0 0 0 1 0 0 0 0 2 21 1

Table J.1-9 (Continued)

Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

EXIST-PM.CMD	Fri Nov 1, 1996 15:45:58	Page 6-1
FISCO/Port Vision 2000 EIS/EIR		
Existing Conditions		
PM Peak Hour		
Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		
Intersection #2 Maritime St./ W. Grand EB Ramps		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.673
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh): 10.5
Optimal Cycle:	70	Level Of Service: B
Approach: North Bound South Bound East Bound West Bound		
Movement: L - T - R L - T - R L - T - R L - T - R		
Control:	Protected	Protected
Rights:	Include	Include
Min. Green:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes:	0 0 1 1 0 1 0 1 0 0 1 0 1 0 1 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Volume Module:		
Base Vol:	0 825 265 5 100 0 5 255 215 0 0 0 0	0 0 0 0
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:	0 825 265 5 100 0 5 255 215 0 0 0 0	0 0 0 0
Added Vol:	0 218 0 0 0 0 0 0 62 0 0 0 0	0 0 0 0
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0
Initial Fut:	0 1043 265 5 100 0 5 255 277 0 0 0 0	0 0 0 0
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:	0 1043 265 5 100 0 5 255 277 0 0 0 0	0 0 0 0
Reduct Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0
Reduced Vol:	0 1043 265 5 100 0 5 255 277 0 0 0 0	0 0 0 0
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:	1.00 1.05 1.05 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:	0 1095 278 5 100 0 5 255 277 0 0 0 0	0 0 0 0
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:	1.00 0.79 0.79 0.77 0.81 1.00 0.69 0.81 0.69 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:	0.00 1.60 0.40 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Final Sat.:	0 2390 607 1467 1545 0 1313 1545 1313 0 0 0 0	0 0 0 0
Capacity Analysis Module:		
Vol/Sat:	0.00 0.46 0.46 0.00 0.06 0.00 0.00 0.17 0.21 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Crit Moves:	***	***
Green/Cycle:	0.00 0.68 0.68 0.01 0.69 0.00 0.31 0.31 0.31 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Volume/Cap:	0.00 0.67 0.67 0.67 0.09 0.00 0.01 0.53 0.67 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Level Of Service Module:		
Delay/Veh:	0.0 6.7 6.7 104.0 3.4 0.0 15.3 19.1 22.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:	0.0 6.7 6.7 104.0 3.4 0.0 15.3 19.1 22.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Queue:	0 18 5 0 1 0 0 6 7 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FISCO/Port Vision 2000 EIS/EIR

Existing Conditions

PM Peak Hour

Level Of Service Computation Report									
1994 HCM Operations Method (Future Volume Alternative)									

Intersection #3 Maritime St./ Burma St.									

Cycle (sec):	100	Critical Vol./Cap. (X):				0.516			
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):				5.6			
Optimal Cycle:	47	Level Of Service:				B			

Approach:	North Bound	South Bound	East Bound	West Bound	*****				
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 1 1 0	1 0 1 1 0	1 0 1 1 0	1 0 1 1 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0

Volume Module:									
Base Vol:	5 905	0 0 320	5 185	0 50	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Growth Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	5 905	0 0 320	5 185	0 50	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Added Vol:	0 218	0 0 62	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
PasserByVol:	0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Initial Fut:	5 1123	0 0 382	5 185	0 50	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
User Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	5 1123	0 0 382	5 185	0 50	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Reduc Vol:	0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	5 1123	0 0 382	5 185	0 50	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
PCE Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.05	1.00 1.05 1.05	1.00 1.05 1.05	1.00 1.05 1.05	1.00 1.05 1.05	1.00 1.05 1.05	1.00 1.05 1.05	1.00 1.05 1.05	1.00 1.05 1.05
Final Vol:	5 1179	0 0 401	5 185	0 50	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0

Saturation Flow Module:									
Sat/Lane:	1900 1900	1900 1900 1900	1900 1900 1900	1900 1900 1900	1900 1900 1900	1900 1900 1900	1900 1900 1900	1900 1900 1900	1900 1900 1900
Adjustment:	0.76 0.80	1.00 0.80 0.80	0.80 0.76 1.00	0.68 1.00 0.68	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Lanes:	1.00 2.00	0.00 1.00 1.98	0.02 1.00 0.00	1.00 0.00 1.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
Final Sat:	1444 3040	0 1900 3003	37 1444	0 1292	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0

Capacity Analysis Module:									
Vol/Sat:	0.00 0.39	0.00 0.13 0.13	0.13 0.13 0.00	0.04 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
Crit Moves:	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.02 0.75	0.00 0.00 0.73	0.73 0.25 0.00	0.25 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
Volume/Cap:	0.18 0.52	0.00 0.00 0.18	0.18 0.52 0.00	0.16 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

Level Of Service Module:									
Delay/Veh:	31.6 3.4	0.0 0.0 2.7	2.7 22.0 0.0	19.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0
User DelAdj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	31.6 3.4	0.0 0.0 2.7	2.7 22.0 0.0	19.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0
Queue:	0 13	0 0 3	0 5 0	1 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0

Table J.1-9 (Continued)

EXIST-PM.CMD Fri Nov 1, 1996 15:45:58 Page 8-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR

Existing Conditions
PM Peak Hour

Level of Service Computation Report

1994 HCM Operations Method (Future Volume Alternative)

Intersection #4 Maritime St./ 14th St.

Cycle (sec): 100 Critical Vol./Cap. (X): 0.590
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 45 Level of Service: B

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected

Rights: Include Include Include Include

Min. Green: 0 0 0 0

Lanes: 1 0 1 0 1 0 1 0 1 0 1 0

Volume Module:

Base Vol: 34 601 28 105 252 14 19 0 36 92 0 290
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 34 601 28 105 252 14 19 0 36 92 0 290
Added Vol: 0 218 0 0 62 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 34 819 28 105 314 14 19 0 36 92 0 290
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 34 819 28 105 314 14 19 0 36 92 0 290
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 34 819 28 105 314 14 19 0 36 92 0 290
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.05 1.05 1.00 1.05 1.05 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 34 860 29 105 330 15 19 0 36 92 0 290

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.76 0.80 0.80 0.76 0.79 0.79 0.51 1.00 0.51 0.66 1.00 0.68
Lanes: 1.00 1.93 0.07 1.00 1.91 0.09 0.35 0.00 0.65 1.00 0.00 1.00
Final Sat.: 1444 2941 99 1444 2879 131 332 0 629 1262 0 1292

Capacity Analysis Module:

Vol/Sat: 0.02 0.29 0.29 0.07 0.11 0.11 0.06 0.00 0.06 0.07 0.00 0.22
Crit Moves: ****
Green/Cycle: 0.11 0.50 0.50 0.12 0.51 0.51 0.38 0.00 0.38 0.38 0.00 0.38
Volume/Cap: 0.22 0.59 0.59 0.59 0.22 0.22 0.15 0.00 0.15 0.19 0.00 0.59

Level of Service Module:

Delay/Veh: 26.6 12.1 12.1 30.4 8.6 8.6 13.2 0.0 13.2 13.4 0.0 17.3
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 26.6 12.1 12.1 30.4 8.6 8.6 13.2 0.0 13.2 13.4 0.0 17.3
Queue: 1 17 1 3 5 0 0 0 1 2 0 7

Level of Service Computation Report														
1994 HCM Operations Method (Future Volume Alternative)														

Intersection #5 Maritime St./ 7th St. Extension														

Cycle (sec):	100	Critical Vol./Cap. (X):										0.543		
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):										13.3		
Optimal Cycle:	50	Level Of Service:										B		

Approach:	North Bound	South Bound	East Bound	West Bound	*****									
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0	0	0	1	1	0	1	0	0	0

Volume Module:														
Base Vol:	41	365	0	0	380	76	226	0	93	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	365	0	0	380	76	226	0	93	0	0	0	0	0
Added Vol:	0	0	0	0	0	0	62	218	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	365	0	0	380	138	444	0	93	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volumes:	41	365	0	0	380	138	444	0	93	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	365	0	0	380	138	444	0	93	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol:	41	383	0	0	399	145	444	0	93	0	0	0	0	0

Saturation Flow Module:														
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.73	0.77	1.00	1.00	0.74	0.74	0.73	1.00	0.65	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.47	0.53	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Final Sat:	1388	2923	0	0	2058	748	1388	0	1242	0	0	0	0	0

Capacity Analysis Module:														
Vol/Sat:	0.03	0.13	0.00	0.00	0.00	0.19	0.19	0.32	0.00	0.07	0.00	0.00	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.05	0.41	0.00	0.00	0.36	0.36	0.59	0.00	0.59	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.54	0.32	0.00	0.00	0.54	0.54	0.54	0.00	0.13	0.00	0.00	0.00	0.00	0.00

Level of Service Module:														
Delay/Veh:	35.5	12.9	0.0	0.0	17.1	17.1	8.6	0.0	5.9	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.5	12.9	0.0	0.0	17.1	17.1	8.6	0.0	5.9	0.0	0.0	0.0	0.0	0.0
Queue:	1	7	0	0	9	3	8	0	1	0	0	0	0	0

Table J.1-9 (Continued)

EXIST-PM.CMD Fri Nov 1, 1996 15:45:58 Page 10-1 Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
PM Peak Hour

Level Of Service Computation Report									
1994 HCM Operations Method (Future Volume Alternative)									
Intersection #6 7th St./ 7th St. Extension									
Cycle (sec):	100	Critical Vol./Cap. (X):		0.473					
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):		17.5					
Optimal Cycle:	43	Level Of Service:		C					
Approach:	North Bound	South Bound	East Bound	West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 1 1 0	1 0 1 1 0	1 0 2 1 0	1 0 2 1 0	1 0 2 1 0	1 0 2 1 0	1 0 2 1 0	1 0 2 1 0	1 0 2 1 0
Volume Module:									
Base Vol:	9 120 45	327 117	6 73 141	42 28 48	153				
Growth Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Initial Bse:	9 120 45	327 117	6 73 141	42 28 48	153				
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0				
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0				
Initial Fut:	9 120 45	327 117	6 73 141	42 28 48	153				
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
PHF Volume:	9 120 45	327 117	6 73 141	42 28 48	153				
Reduc Vol:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0				
Reduced Vol:	9 120 45	327 117	6 73 141	42 28 48	153				
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
MLF Adj:	1.00 1.05	1.05 1.00	1.05 1.10	1.10 1.10	1.10 1.05	1.05 1.00	1.05 1.00	1.05 1.00	1.00 1.00
Final Vol.:	9 126 47	327 123	6 73 155	46 28 50	153				
Saturation Flow Module:									
Sat/Lane:	1900 1900	1900 1900	1900 1900	1900 1900	1900 1900	1900 1900	1900 1900	1900 1900	1900 1900
Adjustment:	0.73 0.74	0.74 0.76	0.76 0.73	0.75 0.75	0.75 0.77	0.73 0.77	0.77 0.65	0.65 0.65	0.65 0.65
Lanes:	1.00 1.46	0.54 1.00	1.91 0.09	1.00 2.31	0.69 1.00	2.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
Final Sat.:	1388 2044	762 1388	2759 135	1388 3280	973 1388	2923 1242	1242 1242	1242 1242	1242 1242
Capacity Analysis Module:									
Vol/Sat:	0.01 0.06	0.06 0.24	0.04 0.04	0.05 0.05	0.05 0.02	0.02 0.02	0.02 0.12	0.12 0.12	0.12 0.12
Crit Moves:	0.01 0.06	0.06 0.24	0.04 0.04	0.05 0.05	0.05 0.02	0.02 0.02	0.02 0.12	0.12 0.12	0.12 0.12
Green/Cycle:	0.08 0.13	0.13 0.50	0.55 0.55	0.55 0.26	0.26 0.11	0.26 0.26	0.26 0.26	0.26 0.26	0.26 0.26
Volume/Cap:	0.08 0.47	0.47 0.47	0.08 0.08	0.47 0.18	0.18 0.18	0.18 0.07	0.07 0.47	0.47 0.47	0.47 0.47
Level Of Service Module:									
Delay/Veh:	27.5 26.8	26.8 11.0	6.9 6.9	28.7 18.6	18.6 26.1	18.0 21.0	21.0 21.0	21.0 21.0	21.0 21.0
User DelAdj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AdjDel/Veh:	27.5 26.8	26.8 11.0	6.9 6.9	28.7 18.6	18.6 26.1	18.0 21.0	21.0 21.0	21.0 21.0	21.0 21.0
Queue:	0 3	1 6	2 0	2 3	1 1	1 1	1 1	1 1	1 1

EXIST-PM.CMD Fri Nov 1, 1996 15:45:58 Page 11-1
 FISCO/Port Vision 2000 EIS/EIR
 Existing Conditions
 PM Peak Hour

Level Of Service Computation Report									
1994 HCM Operations Method (Future Volume Alternative)									
Intersection #7 Middle Harbor Rd./ Gate 2 Connection									
Cycle (sec):	100	Critical Vol./Cap. (X):		0.917					
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):		28.4					
Optimal Cycle:	180	Level Of Service:		D					
Approach: North Bound South Bound East Bound West Bound									
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0	1	0	0	0	1	0
Volume Module:									
Base Vol:	102	0	347	0	0	0	421	133	128
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	0	347	0	0	0	421	133	128
Added Vol:	0	0	371	0	0	0	0	0	106
PasserByVol:	0	0	0	0	0	0	0	0	0
Initial Fut:	102	0	718	0	0	0	421	133	234
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	102	0	718	0	0	0	421	133	234
Reduc Vol:	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	0	718	0	0	0	421	133	234
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.00	1.05
Final Vol:	102	0	718	0	0	0	442	140	234
Saturation Flow Module:									
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	1.00	0.68	1.00	1.00	0.77	0.77	0.76	0.80
Lanes:	1.00	0.00	1.00	0.00	0.00	1.52	0.48	1.00	2.00
Final Sat:	1444	0	1292	0	0	0	2216	702	1444
Capacity Analysis Module:									
Vol/Sat:	0.07	0.00	0.56	0.00	0.00	0.00	0.20	0.16	0.09
Crit Moves:	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.61	0.00	0.61	0.00	0.00	0.22	0.22	0.18	0.39
Volume/Cap:	0.12	0.00	0.92	0.00	0.00	0.92	0.92	0.92	0.23
Level Of Service Module:									
Delay/Veh:	5.4	0.0	22.5	0.0	0.0	0.0	37.9	37.9	51.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	5.4	0.0	22.5	0.0	0.0	0.0	37.9	37.9	51.0
Queue:	1	0	21	0	0	0	15	6	9

Table J.1-9 (Continued)

Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

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Fri Nov 1, 1996 15:45:58

EXIST-PM.CMD

FISCO/Port Vision 2000 EIS/EIR
Existing Conditions
PM Peak Hour

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Level Of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)
*****
Intersection #8 Adeline St./ 3rd St.
*****
Cycle (sec): 100 Critical Vol./Cap. (X): 0.505
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 13.1
Optimal Cycle: 46 Level Of Service: B
*****
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
-----
Control: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 1 0 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0 1 0
-----
Volume Module:
Base Vol: 36 340 122 43 41 15 30 14 13 89 39 78
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 36 340 122 43 41 15 30 14 13 89 39 78
Added Vol: 0 147 224 0 106 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 36 487 346 43 147 15 30 14 13 89 39 78
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 36 487 346 43 147 15 30 14 13 89 39 78
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 36 487 346 43 147 15 30 14 13 89 39 78
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05
Final Vol: 38 512 363 45 154 16 30 14 13 89 39 78
-----
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.72 0.72 0.72 0.75 0.75 0.75 0.73 0.72 0.72 0.73 0.69 0.69
Lanes: 0.08 1.12 0.80 0.42 1.43 0.15 1.00 0.52 0.48 0.84 0.39 0.77
Final Sat: 114 1541 1092 600 2052 213 1388 705 654 1163 510 1019
-----
Capacity Analysis Module:
Vol/Sat: 0.33 0.33 0.33 0.08 0.08 0.08 0.02 0.02 0.02 0.08 0.08 0.08
Crit Moves: ****
Green/Cycle: 0.66 0.66 0.66 0.15 0.15 0.15 0.04 0.04 0.04 0.15 0.15 0.15
Volume/Cap: 0.51 0.51 0.51 0.51 0.51 0.51 0.51 0.46 0.46 0.51 0.51 0.51
-----
Level Of Service Module:
Delay/Veh: 5.9 5.9 5.9 26.2 26.2 26.2 33.3 32.2 32.2 26.1 26.1 26.1
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 5.9 5.9 5.9 26.2 26.2 26.2 33.3 32.2 32.2 26.1 26.1 26.1
Queue: 1 7 5 1 4 1 1 0 0 2 1 2
*****

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Table J.1-10

FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Existing Weekdays (After UP/SP Merger)

Crossing Street	Number of Trains in Both Directions						Train Speed (mph)	
	Passenger *		Freight *		Switchers *	Total	Passenger	Freight/ Switchers
	1200	600	6000	1200	300			
1. Cutting Boulevard	4	16	12			32	60	60
2. Gilman Street	4	16	12	4	4	40	60	60
3. Camelia Street	4	16	12	4	4	40	60	60
4. Cedar Street	4	16	12	4	4	40	60	60
5. Virginia Street	4	16	12	4	4	40	60	60
6. Hearst Avenue	4	16	12	4	4	40	60	60
7. Addison Street	4	16	12	4	4	40	60	60
8. Bancroft Way	4	16	12	4	4	40	60	60
9. 67th Street	4	16	12	4	4	40	45	45
10. 66th Street	4	16	12	4	4	40	45	45
11. 65th Street	4	16	12	4	4	40	45	45
12. Market Street	10	26	4	4		44	15	15
13. M. L. King Blvd.	10	26	4	4		44	15	15
14. Clay Street	10	26	4	4		44	15	15
15. Washington Street	10	26	4	4		44	15	15
16. Broadway	10	26	4	4		44	15	15
17. Franklin Street	10	26	4	4		44	15	15
18. Webster Street	10	26	4	4		44	15	15
19. Oak Street	10	26	4	4		44	15	15
20. 5th Avenue	2	6	4	4		16	40	20
21. 29th Avenue	2	6	4	4		16	60	40
22. Fruitvale Avenue	2	6	4	4		16	60	40
23. 37th Avenue	2	6	4	4		16	60	40

* Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Table J.1-11

FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Existing Weekdays (After UP/SP Merger)

Crossing Street	Gate Down Time Per Train (minutes)					Total Gate Down Time (min./day)
	Passenger *				Switchers *	
	1200	600	6000	1200	300	
1. Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	32
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	37
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	37
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	37
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	37
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	37
7. Addison Street	0.7	0.6	1.6	0.7	0.6	37
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	37
9. 67th Street	0.8	0.7	2.0	0.8	0.6	44
10. 66th Street	0.8	0.7	2.0	0.8	0.6	44
11. 65th Street	0.8	0.7	2.0	0.8	0.6	44
12. Market Street	1.4	1.0	5.0	1.4	0.0	66
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	66
14. Clay Street	1.4	1.0	5.0	1.4	0.0	66
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	66
16. Broadway**	1.4	1.0	5.0	1.4	0.0	66
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	66
18. Webster Street	1.4	1.0	5.0	1.4	0.0	66
19. Oak Street	1.4	1.0	5.0	1.4	0.0	66
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	26
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	17
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	17
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	17

* Values shown below train type represent the length of each train in feet.

** Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Source: Nolte and Associates 1996

Gate Down Time Per Train = $(a + b / 1.47 / c) / 60$

where, a = 30 seconds track clearance time

b = train length (ft.)

c = train speed (mph)

Table J.1-12

**FISCO/Port Vision 2000 EIS/EIR
Traffic Volumes at Railroad Crossings
Existing Weekdays (After UP/SP Merger)**

Crossing Street	Jurisdiction	Average Daily Traffic for Year Traffic Was Counted	Year Traffic Was Counted	Average Daily Traffic (1996)
1. Cutting Boulevard	Richmond	26,892	1994	27,430
2. Gilman Street	Berkeley	17,413	1986	19,150
3. Camelia Street	Berkeley		1996 (Estimated Max.)	2,000
4. Cedar Street	Berkeley	3,413	1986	3,750
5. Virginia Street	Berkeley	1,584	1986	1,740
6. Hearst Avenue	Berkeley	5,758	1986	6,330
7. Addison Street	Berkeley		1996 (Estimated Max.)	2,000
8. Bancroft Way	Berkeley		1996 (Estimated Max.)	2,000
9. 67th Street	Emeryville		1996 (Estimated Max.)	2,000
10. 66th Street	Emeryville		1996 (Estimated Max.)	2,000
11. 65th Street	Emeryville		1995	2,700
12. Market Street	Oakland	3,655	1996	3,660
13. M. L. King Blvd.	Oakland	309	1976	340
14. Clay Street	Oakland	1,531	1977	1,680
15. Washington Street	Oakland	613	1976	670
16. Broadway	Oakland	11,833	1978	12,900
17. Franklin Street	Oakland	1,626	1976	1,790
18. Webster Street	Oakland	3,111	1974	3,450
19. Oak Street	Oakland	3,340	1976	3,670
20. 5th Avenue	Oakland	6,224	1976	6,850
21. 29th Avenue	Oakland	9,034	1990	9,310
22. Fruitvale Avenue	Oakland	22,304	1993	22,640
23. 37th Avenue	Oakland	1,070	1994	1,080

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Note: Escalation factors were applied to escalate counts to 1996 estimated values as follows:

Cities of Richmond & Berkeley - 1% per year; City of Oakland 1/2% per year.

Table J.1-13

**FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Existing Weekdays (After UP/SP Merger)**

Crossing Street	Jurisdiction	Average Daily Traffic (1996)	Total Gate Down Time (min./day)	Vehicular Delay (hours/day)
1. Cutting Boulevard	Richmond	27,430	32	9.9
2. Gilman Street	Berkeley	19,150	37	7.5
3. Camelia Street	Berkeley	2,000	37	0.8
4. Cedar Street	Berkeley	3,750	37	1.5
5. Virginia Street	Berkeley	1,740	37	0.7
6. Hearst Avenue	Berkeley	6,330	37	2.5
7. Addison Street	Berkeley	2,000	37	0.8
8. Bancroft Way	Berkeley	2,000	37	0.8
9. 67th Street	Emeryville	2,000	44	1.1
10. 66th Street	Emeryville	2,000	44	1.1
11. 65th Street	Emeryville	2,700	44	1.5
12. Market Street	Oakland	3,660	66	4.1
13. M. L. King Blvd.	Oakland	340	66	0.4
14. Clay Street	Oakland	1,680	66	1.9
15. Washington Street*	Oakland	670	66	0.8
16. Broadway*	Oakland	12,900	66	14.6
17. Franklin Street*	Oakland	1,790	66	2.0
18. Webster Street	Oakland	3,450	66	3.9
19. Oak Street	Oakland	3,670	66	4.2
20. 5th Avenue	Oakland	6,850	26	3.4
21. 29th Avenue	Oakland	9,310	17	1.9
22. Fruitvale Avenue	Oakland	22,640	17	4.7
23. 37th Avenue	Oakland	1,080	17	0.2
Total Delay				70.3

* Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996

Dowling Associates 1996

Appendix J.2
Marine Terminal Traffic Analysis

Marine Terminal Traffic Analysis

Fleet Industrial Supply Center, Oakland (FISCO) Disposal and Reuse EIS/EIR

Project W96021

October 28, 1996

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This report was prepared by Jordan Woodman Dobson for the Port of Oakland. JWD is working for Tetra Tech in the development of an EIS / EIR for the Port.

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1. Overview

1.1 INTRODUCTION

This report provides data in support of the Traffic Impact section of the Environmental Impact Statement and Report (EIS/EIR) for the redevelopment of the Naval Fleet Industrial Supply Center, Oakland (FISCO).

The proposed FISCO site redevelopment includes plans for new marine terminals along the Port of Oakland's Inner Harbor Channel, as well as the development of a new Joint Intermodal Rail Terminal (JIT). The new marine terminals are expected to generate traffic to and from the new JIT and to and from regional roads and highways.

Jordan Woodman Dobson (JWD) was contracted to estimate volumes of automobile and truck traffic that can be generated by existing and new marine terminal developments in 1996 and 2010. JWD estimated peak-day traffic generated by marine terminals in four zones: Outer Harbor, 7th Street, Middle Harbor, and a New Terminal Area.

The "peak day" was assumed to be an average day during a peak traffic week. Three time periods during a peak gate day were of particular interest: the morning peak, 7 AM to 9 AM; the evening peak, 4 PM to 6 PM; and the lunch peak, 11 AM to 12 noon.

1.2 PROCESS

TRUCK TRAFFIC

Truck traffic for 1996 is estimated from 1995 data by assuming a uniform increase in container throughput per terminal and ratio of truck trips to ship lifts.

Truck traffic for 2010 was estimated by assuming that container shipping will grow at the rate predicted by the *San Francisco Bay Area Seaport Plan* prepared by Multitrans Corporation in 1994. The number of ship moves to rail was assumed to be variable with at least 5% of ship traffic moving by rail. The number of ship moves by road to local markets was assumed to be fixed. Total volumes were adjusted to not exceed the capacity of each option as determined by JWD.

The marine terminal areas within the Port were grouped into four zones, summarized in Table 1.1.

Zone	Code	Zone	Terminals
New Terminal Area	NT	1	To Be Built
Middle Harbor	MH	6	APL, Howard
7th Street	7th St	7	TraPac, Matson, MTC
Outer Harbor	OH	8	Sea-Land, Yusen, Maersk, TransBay

Table 1.1
Port of Oakland Terminals and Zones

Four alternative FISCO redevelopment plans are under consideration for New Terminal Area, Zone 1. These include four alternatives labeled Options A through D, as well as a No-Build option. The acreages for these options were based on proposed development plans presented in the EIS/EIR document.

The acreages of the existing marine terminals in Zones 6 through 8 were taken from the 1996 edition of *Lloyds Ports of the World*. According to Tetra Tech, Inc., the size of the existing terminals would not increase between now and 2010, except in Development Alternative B where Zone 8 was assumed to expand by 22 acres.

The daily truck trips were distributed over the course of a day according to an observed truck arrival pattern, and a derived truck departure pattern based on the arrival pattern and a truck turnaround time. JWD used data collected in 1996 at Marine Terminals Corporation's (MTC) 7th Street terminal to estimate the hourly truck traffic arrival and departure patterns for terminals.

CAR TRAFFIC

Car traffic at the Port was estimated based on terminal acreage, information regarding terminal employment, and assumptions about trips generated per employee. Car traffic was distributed over the course of the day according to traffic counts on roads within the Port of Oakland. These counts were provided by Dowling Associates.

2. Analysis Data and Assumptions

2.1 THROUGHPUT

1995 THROUGHPUT

Table 2.1 shows statistics about the container terminals at the Port of Oakland for 1995. There were approximately 1.75 twenty-foot equivalent units (TEUs) per container, indicating that approximately 75% of containers were 40 feet long and 25% of containers were 20 feet long.

Zone	Terminal	Gross Area (acres)	1995 Thruput (ship lifts)	Thruput per Gross Acre (conts)	Thruput per Gross Acre (TEUs)
Zone 6 (Middle Harbor)	APL	82.8	162,407	1,961	3,433
	Howard	48.9	94,359	1,930	3,375
Subtotal		131.7	256,766	1,950	3,413
Zone 7 (7th Street)	TraPac	34.6	39,377	1,138	1,992
	Matson	65.5	93,158	1,422	2,490
	MTC	56.6	136,301	2,408	4,215
Subtotal		156.7	268,836	1,716	3,003
Zone 8 (Outer Harbor)	Sea Land	65.5	111,146	1,697	2,970
	Yusen	40.0	83,502	2,088	3,650
	Maersk	45.7	71,031	1,554	2,970
	TransBay	29.2	57,255	1,961	3,436
Subtotal		180.3	322,934	1,791	3,134
Total		468.7	848,536	1,810	3,168

Table 2.1
1995 Terminal Statistics

The Port as a whole handled about 1,500,000 stevedoring TEUs with 470 gross acres of marine terminal, or 3,200 TEUs per acre per year.

1996 THROUGHPUT

The 1996 throughput volume was calculated by increasing the 1995 throughput at each terminal by an assumed growth rate of 7%.

2010 THROUGHPUT

Throughput volume for 2010 was estimated based on the container shipping growth projections from the Seaport Plan. The future container volumes were expressed in terms of metric tons of cargo per year instead of the more common TEUs.

Table 2.2 converts the projections from the Seaport Plan into containers based on the ratio of containers to forecast tonnage in 1995.

Year	1995	2000	2005	2010
Metric Tons	11,191,000	14,334,000	18,282,000	22,227,000
Containers	848,536	1,086,848	1,386,197	1,685,319
Annual Growth		5.1%	5.0%	4.0%

Table 2.2
Container Volume Forecast - Seaport Plan

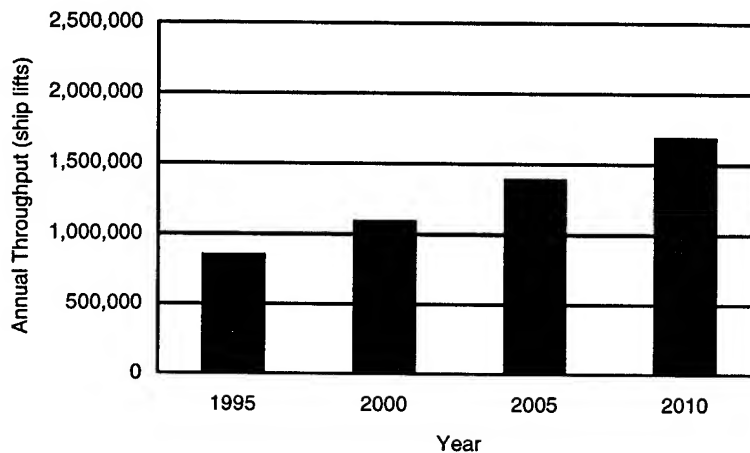


Figure 2.1
Projected Container Traffic - Seaport Plan

2.2 OVER-THE-ROAD VS. RAIL TRAFFIC

When containers arrive in the Port they either travel to their ultimate destination by truck or are drayed by truck to nearby intermodal rail yards for inland transport. For purposes of this traffic study, these two types of moves are referred to as "Over the Road" (OTR) and "Rail" moves.

OTR containers have destinations in the area served by the Port of Oakland. JWD assumed that these containers will continue to arrive in the San Francisco Bay ports regardless of future development at the Port of Oakland.

Rail moves are bound for final destinations as far away as the East Coast. The volume of this traffic moving through the Port of Oakland will depend on the attractiveness of Oakland as a rail gateway compared with other West Coast ports.

The *Port of Oakland Joint Intermodal Terminal Operational Analysis Report* (January, 1995) indicates that 148,500 containers used rail facilities in the Port of Oakland in 1994, corresponding to roughly 20% of total Port throughput. OTR moves comprised the remaining 80% of ship lifts in 1994.

The Seaport Plan makes no mention of the relationship between OTR and Rail traffic. JWD assumed that OTR traffic would constitute 80% of the Seaport Plan projected container traffic.

If the Port improves its attractiveness to Rail traffic by building the JIT, Rail traffic through Oakland would likely increase. Similarly, Rail traffic would decrease if terminals become congested by OTR moves.

The upper bound on Rail traffic through the Port of Oakland was calculated as the minimum of:

1. *The capacity of nearby railyards.* The estimated capacity of the Joint Intermodal Terminal in 2010 has been set at 1.2 million lifts per year.
2. *The capacity of the marine terminals.* JWD estimated the capacity of terminals at the Port of Oakland in 2010 as 4,700 TEUs, or 2,685 ship lifts, per acre per year. This is 500 TEUs per acre more than the busiest terminal handled in 1996.
3. *The potential market for intermodal cargo.* This factor is perhaps the most difficult to estimate but JWD projects the fraction of Port traffic that moves by rail will not be higher than 40% of the total traffic in 2010. This is twice the Rail traffic ratio that the Port experienced in 1994.

The lower bound on rail demand was set at 5% of the total marine terminal traffic, reflecting a portion of maritime traffic that would move by rail through the Port of Oakland regardless of congestion caused by OTR demand.

PORT CAPACITY

Table 2.3 illustrates the total capacity of each of the proposed development Options, based on 4,700 TEUs per acre per year. The terminal acreage within the Outer Harbor, 7th Street, and Middle Harbor Zones remains the same between 1996 and 2010 for Options A, C, and D, and the No-Build Option. Terminals are developed within the New Terminal Area Zone in Options A, B, C, and D. In Option B, an additional 22 acres of terminal are developed in the Outer Harbor Zone.

Zone	No-Build	Option A	Option B	Option C	Option D
1 - New Terminal Area	0	260	100	290	278
6 - Middle Harbor	132	132	132	132	132
7 - 7 th Street	157	157	157	157	157
8 - Outer Harbor	180	180	202	180	180
Total Acreage	469	729	591	759	747
Total Capacity (moves)	1,260,000	1,960,000	1,590,000	2,040,000	2,010,000

Table 2.3
Terminal Acreages and Capacities

Figure 2.2 depicts the terminal acreages graphically. Figure 2.3 depicts the terminal capacities graphically.

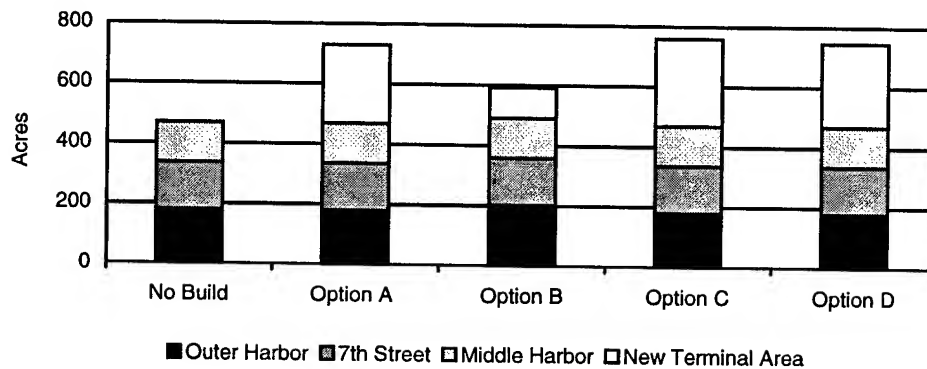


Figure 2.2
Terminal Acreages

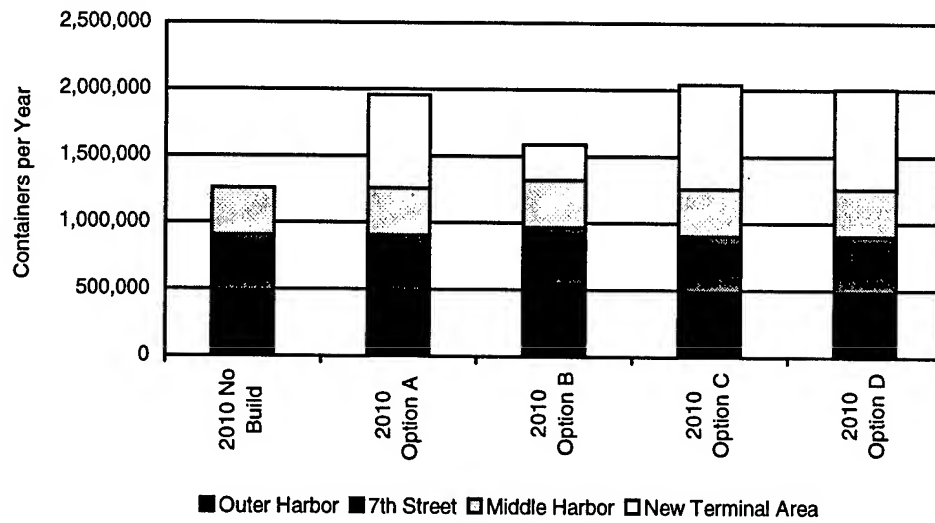


Figure 2.3
Terminal Capacities

Figure 2.4 shows the relationship between capacities for the various options, the lower-bound potential demand, and upper-bound demands #1 and #3.

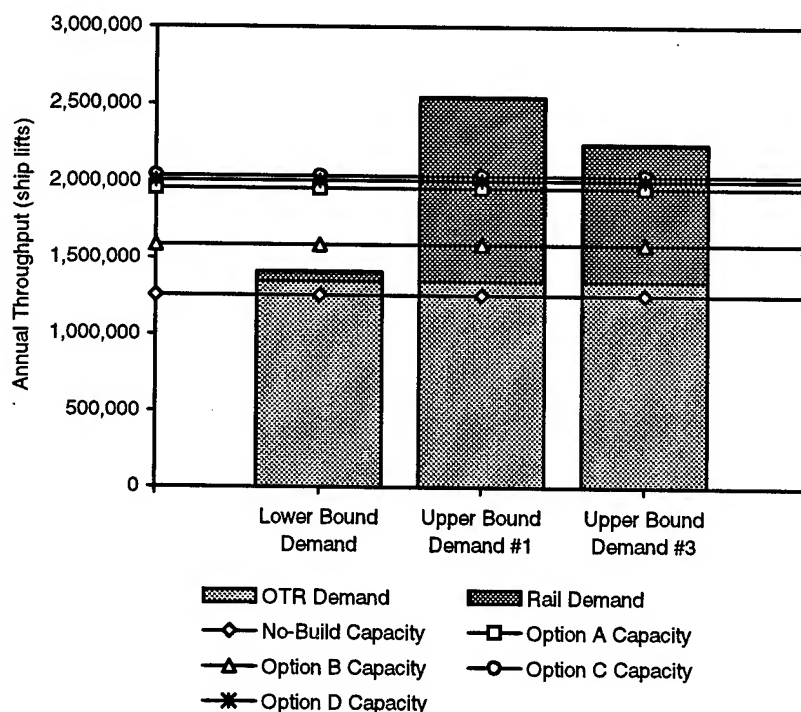


Figure 2.4
Port Capacity vs. Potential 2010 Demand

Figure 2.4 shows:

The OTR demand in 2010 exceeds the marine terminal capacities of the No-Build Option.

The upper-bound demands fixed by the JIT capacity (#1) and the rail market potential (#3) will exceed the capacities of all options.

These relationships imply that Rail demand in 2010, and therefore Port demand, will be limited by the overall capacities of the marine terminals, as summarized in Table 2.3, rather than by the other factors.

Table 2.4 summarizes the 2010 total demand, and its breakdown into OTR and Rail traffic, for each option. For the No-Build Option, it was assumed that all but 5% of Rail traffic would be handled by other Ports. In addition, it should be noted that about 152,000 OTR lifts in the No-Build Option would be handled at other Bay Area Ports such as Richmond or San Francisco.

Zone	No-Build	Option A	Option B	Option C	Option D
OTR Traffic - Oakland	1,196,000	1,348,000	1,348,000	1,348,000	1,348,000
Rail Traffic - Oakland	64,000	612,000	242,000	692,000	662,000
Total Traffic - Oakland	1,260,000	1,960,000	1,590,000	2,040,000	2,010,000
Rail / Total Traffic - Oakland	5.0%	31.2%	15.2%	33.9%	32.9%
OTR Traffic -Other Bay Ports	152,000	0	0	0	0

Table 2.4
Projected Port Traffic 2010

2.3 TRUCK TRAFFIC

Peak truck traffic was calculated for 1996 and 2010 based on several assumptions regarding terminal operations drawn from historical data and JWD's experience and professional judgment.

Gate Operating Schedule: Terminals gates were assumed to operate 52 weeks per year and five days per week.

Peak Week Factor: The peak week has 1.25 times as many ship lifts as the average week.

Gate Transactions to Ship Lift Ratio: Each ship lift generates 1.33 container transactions through the gate. The ratio is not 1.0 because the marine terminals act as storage depots for empty containers that may move in and out of the terminal without generating a ship lift, as shown in Figure 2.5.

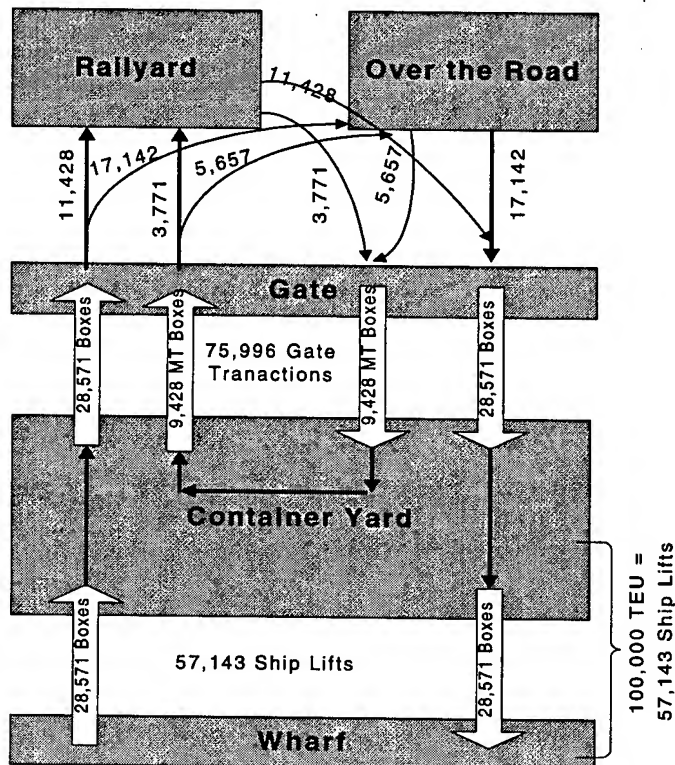


Figure 2.5
Container Flow at the Port of Oakland, 2010

Truck Trips to Gate Transactions Ratio: Each gate transaction in 1996 generates an average of 1.7 truck trips. Truck trips include trucks that enter or leave the terminal with or without a container. The ratio is not 2.0 because some trucks both deliver and retrieve containers from the terminal in a single visit as described in Table 2.5 and Figure 2.5. The fraction of OTR vs. Rail trips (and therefore the overall weighted average of truck trips per gate transaction) will vary with each development alternative.

	1996		2010	
	OTR	Rail	OTR	Rail
Fraction of Ship Lifts	80%	20%	Variable	Variable
Fraction of Hauls 1-way	65%	90%	65%	90%
Fraction of Hauls 2-way	35%	10%	35%	10%
Truck Trips per Gate Transaction	1.65	1.90	1.65	1.90

Table 2.5
Truck Trips per Gate Transaction

Figure 2.6 describes the 80%/20% split found in 1996 as an illustration of the relationship between truck trips and gate transactions.

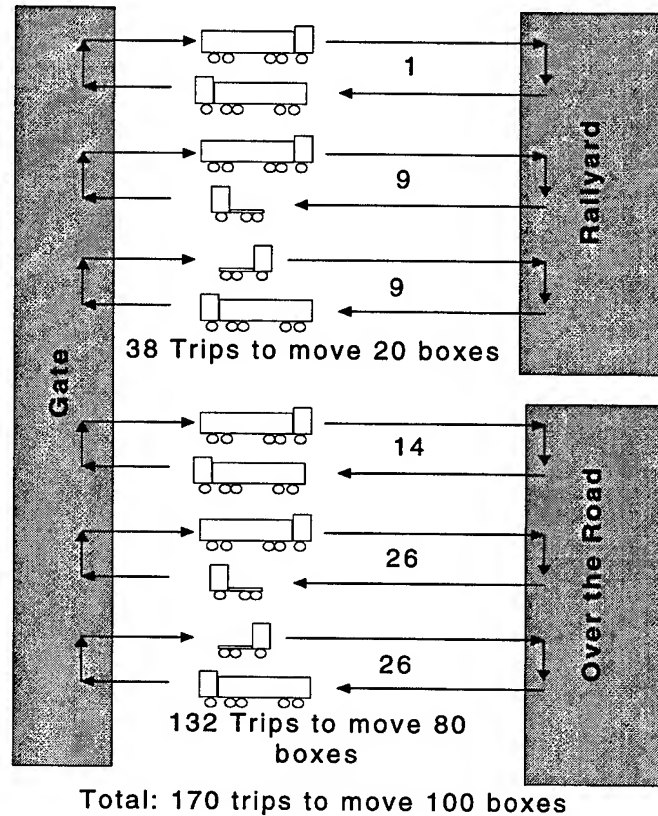


Figure 2.6
Gate Transactions vs. Truck Trips

Table 2.6 shows how these factors were used to estimate truck trips for the Port in 2010 under each development option.

Item	Factor	No Build	A	B	C	D
Annual Thruput		1,258,925	1,957,211	1,586,582	2,037,782	2,005,554
Weekly Thruput	1/52	24,210	37,639	30,511	39,188	38,568
Pk Week Thruput	1.25	30,263	47,048	38,139	48,985	48,210
Avg Day Thruput	1/5	6,053	9,410	7,628	9,797	9,642
Daily Gate Moves	1.33	8,050	12,515	10,145	13,030	12,824
OTR Fraction		95.0%	68.9%	85.0%	66.2%	67.2%
Rail Fraction		5.0%	31.1%	15.0%	33.8%	32.8%
Gate moves OTR		7,647	8,621	8,621	8,621	8,621
Gate moves to Rail		402	3,894	1,524	4,409	4,203
Trips OTR	1.65	12,618	14,225	14,225	14,225	14,225
Trips to Rail	1.90	765	7,398	2,895	8,377	7,986
Total Truck Trips		13,383	21,623	17,120	22,602	22,210

Table 2.6
Calculation of 2010 Daily Truck Trips from Annual Throughput

Peak truck trips were calculated for each zone based on the acreages of each zone. Table 2.7 shows the fraction of total Port area at each Zone and Table 2.8 shows the number of truck trips generated by each zone. Figure 2.7 shows the calculated daily truck trips by zone.

Zone	2010 No Bld	2010 Opt A	2010 Opt B	2010 Opt C	2010 Opt D
1 - New Terminal Area	0.0%	35.7%	16.9%	38.2%	37.2%
6 - Middle Harbor	28.1%	18.1%	22.3%	17.4%	17.6%
7 - 7th Street	33.4%	21.5%	26.5%	20.6%	21.0%
8 - Outer Harbor	38.5%	24.8%	34.3%	23.8%	24.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2.7
Fraction of Port Area in Each Zone - 2010

Zone	2010 No Bld	2010 Opt A	2010 Opt B	2010 Opt C	2010 Opt D
1 - New Terminal Area	0	7,715	2,898	8,639	8,268
6 - Middle Harbor	3,760	3,908	3,817	3,923	3,917
7 - 7th Street	4,473	4,648	4,540	4,667	4,660
8 - Outer Harbor	5,150	5,352	5,865	5,373	5,365
Total Truck Trips	13,383	21,623	17,120	22,602	22,210

Table 2.8
2010 Daily Truck Trips During Peak Week

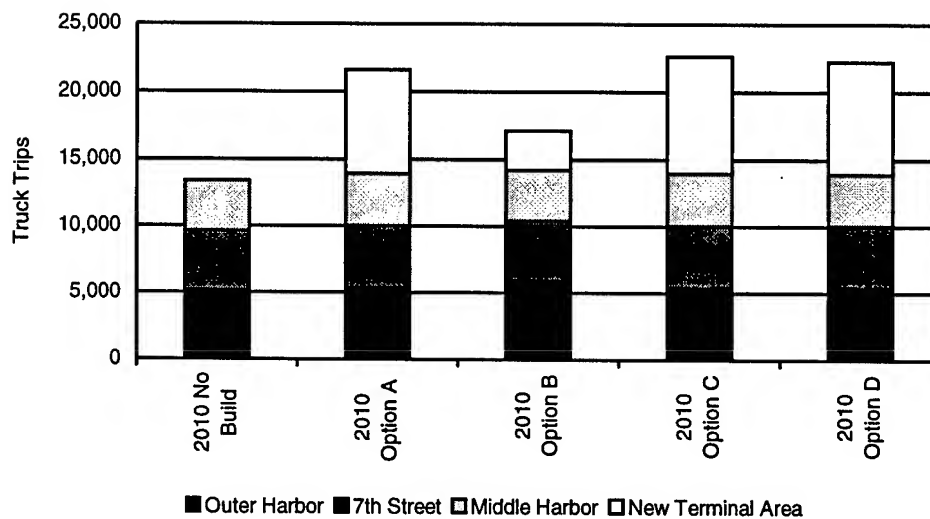


Figure 2.7
2010 Daily Truck Trips During Peak Week

2.4 TRUCK ARRIVAL AND DEPARTURE PATTERNS

Truck arrival and departure patterns were used to distribute daily truck trips over the course of the day. A truck arrival pattern observed at MTC's 7th Street terminal was used as the arrival pattern for all terminals. MTC's 7th Street terminal gate operates during the day only. This is the current practice at the Port of Oakland terminals and it was assumed to continue into 2010. The truck arrival pattern was applied to the total daily truck arrivals estimated for each terminal to distribute Port truck trips by hour.

A truck departure pattern was estimated from the truck arrival pattern, assuming that truck departures would take place 30 minutes after arrival.

Figures 2.8 and 2.9 respectively show the arrival and departure patterns of truck trips. Traffic is heavy after the terminal opens, is light during lunch, and trails off toward gate closing time.

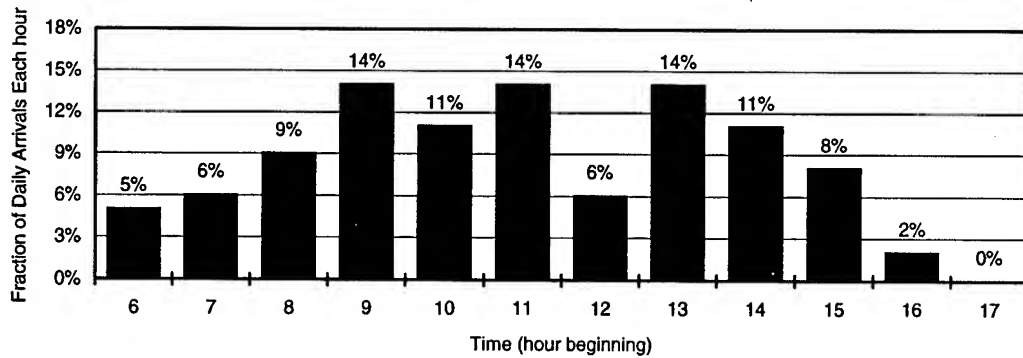


Figure 2.8
Truck Arrival Pattern

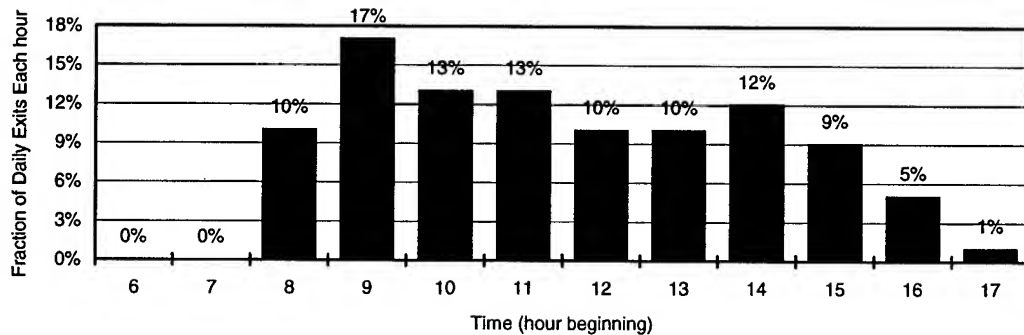


Figure 2.9
Truck Departure Pattern

2.5 PORT CAR TRIP GENERATION

The calculation of car trips to and from the terminals was based on terminal acreage, an estimate of the number of employees per acre, and the number of daily car trips per employee.

EMPLOYMENT AT TERMINALS

In 1996, in a "unit" terminal of 50 acres, JWD estimates that 120 employees work the day shift and 55 work the night shift when a ship is on berth. When there is no ship on berth, 60 employees work the day shift and 0 work the night shift.

The number of employees working the "unit" (50-acre terminal) is expected to increase at the same rate as the increase in terminal productivity (2.6% per year). This employment information is presented in Table 2.9.

Year	Ship on Berth		No Ship on Berth	
	Day	Night	Day	Night
1996	120	55	60	0
2010	172	79	86	0

Table 2.9
Marine Terminal Employment

During peak periods, JWD estimates that two-thirds of the terminals will have a ship on-berth.

DAILY CAR TRIPS

Table 2.10 shows the number of daily car trips generated based on the employment at a 50-acre unit terminal, and assumes an average of 3.5 employee trips per day. This estimate considers the fact that nearly all marine terminal employees drive alone to work. In addition, many employees leave the terminal during lunch. Terminal visitors also generate some auto trips.

Fraction of Time	Ship on Berth	No Ship on Berth	Average
	2/3	1/3	
Year			
1996	613	210	478
2010	877	301	685

Table 2.10
Peak Daily Car Trip Generation for a 50-Acre Terminal Unit

DISTRIBUTION OF CAR TRIPS

The distribution of car trips throughout the day, shown in Table 2.11, reflects employees' work schedules. These fractions were derived from traffic counts on Port of Oakland roads taken by Dowling Associates. The percentage indicates what fraction of the total daily auto trips occur as an entry or exit in the given hour.

	Entries to Terminal	Exits from Terminal
0600 - 0700	7.3%	0.4%
0700 - 0800	8.4%	0.4%
0800 - 0900	4.9%	0.3%
0900 - 1000	4.2%	0.5%
1000 - 1100	3.2%	2.1%
1100 - 1200	3.4%	3.4%
1100 - 1300	3.7%	3.7%
1300 - 1400	3.1%	3.1%
1400 - 1500	1.3%	5.1%
1500 - 1600	0.4%	7.6%
1600 - 1700	0.4%	7.4%
1700 - 1800	0.7%	5.9%
0600 - 1800	41.0%	39.9%

Table 2.11
Car Trip Distribution

Figure 2.10 illustrates the distribution of car trips.

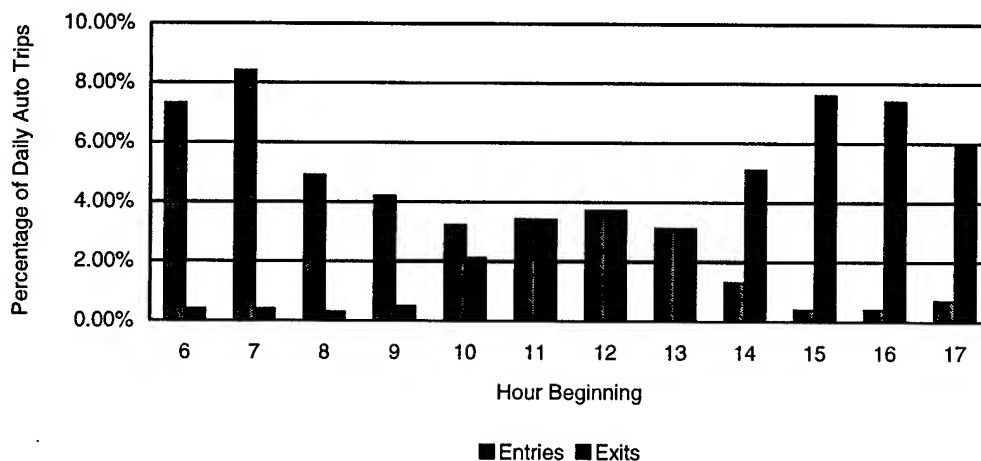


Figure 2.10
Distribution of Car Trips Throughout Day

3. Analysis Results

This section summarizes the results for both truck and auto trips in order to estimate total marine terminal traffic in 1996 and 2010.

3.1 1996 TRAFFIC

Table 3.1 shows peak truck trips for existing zones for key hours during the day broken down by entries and exits.

Zone:	6 - Middle Harbor		7 - 7th Street		8 - Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits
0600-0700	73	0	76	0	91	0
0700-0800	90	0	94	0	113	0
0800-0900	140	149	147	156	176	188
0900-1000	206	252	216	264	259	317
1000-1100	169	187	177	196	212	236
1100-1200	213	191	223	200	268	240
1200-1300	88	150	92	157	110	189
1300-1400	209	149	219	156	263	187
1400-1500	160	185	168	194	202	233
1500-1600	115	138	120	144	144	173
1600-1700	30	73	32	76	38	91
1700-1800	0	15	0	16	0	19

Table 3.1
1996 Peak - Daily Truck Trips During Peak Week by Zone

Table 3.2 describes the total peak truck traffic moving to and from the rail yards in 1996.

	Total Truck Trips	Truck Trips for Rail Yard
Middle Harbor (6)	2,987	668
7th Street (7)	3,127	699
Outer Harbor (8)	3,756	840
Total	9,870	2,207

Table 3.2
1996 Peak - Daily Truck Traffic During Peak Week to Rail Yard

Table 3.3 shows the distribution of peak car trips associated with Port employment in 1996.

Zone:	6 - Middle Harbor		7 - 7th Street		8 - Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits
0600-0700	93	5	110	6	127	7
0700-0800	106	6	126	7	145	8
0800-0900	62	3	73	4	85	4
0900-1000	52	6	62	7	72	8
1000-1100	40	27	48	32	55	37
1100-1200	43	43	51	51	58	58
1200-1300	47	47	56	56	64	64
1300-1400	39	39	46	46	53	53
1400-1500	16	65	19	77	22	89
1500-1600	5	96	6	114	7	131
1600-1700	5	94	6	112	7	128
1700-1800	8	74	10	88	11	101

Table 3.3
1996 Peak - Daily Car Trips During Peak Week by Zone

Table 3.4 and Figure 3.1 illustrate the distribution of peak truck and car trips for the Port as a whole throughout the day.

	Truck Entries	Truck Exits	Total Truck Trips	Car Entries	Car Exits	Total Car Trips
0600-0700	240	0	240	329	17	347
0700-0800	296	0	296	376	20	396
0800-0900	463	493	957	220	12	231
0900-1000	681	834	1,515	187	21	208
1000-1100	558	620	1,178	143	95	238
1100-1200	703	631	1,334	152	152	304
1200-1300	290	497	787	167	167	334
1300-1400	692	491	1,183	138	138	277
1400-1500	530	611	1,142	58	231	288
1500-1600	380	455	835	18	341	359
1600-1700	100	240	341	18	334	351
1700-1800	0	50	50	29	262	292

Table 3.4
1996 Peak - Daily Truck and Car Trips During Peak Week by Hour of Day for the Whole Port

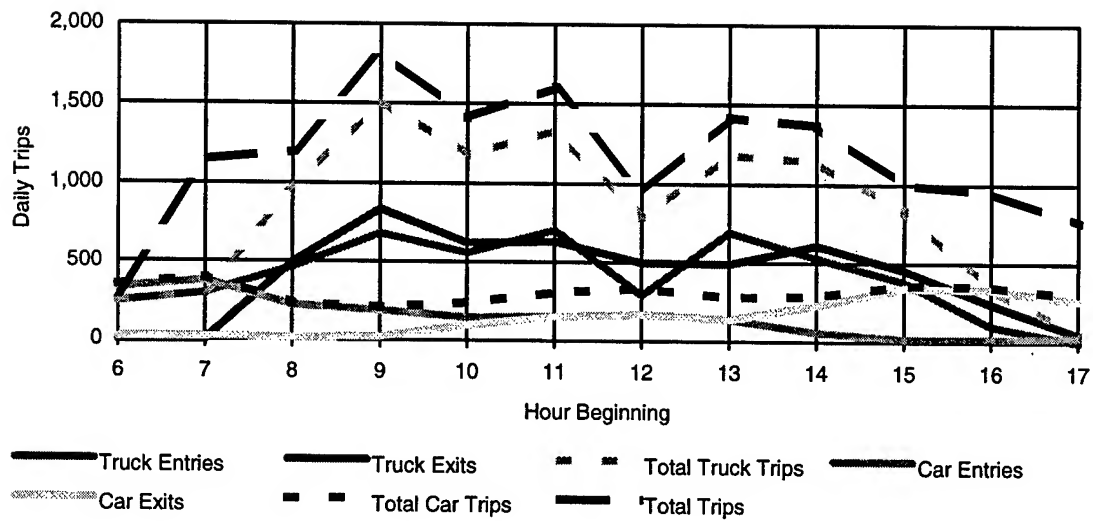


Figure 3.1
1996 Peak - Daily Port Car and Truck Trips During Peak Week

3.2 2010 TRAFFIC

Tables 3.5 through 3.9 describe peak daily truck and car traffic for each option in 2010.

Zone:	1 New Terminal		6 Middle Harbor		7 7th Street		8 Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	0	0	113	0	134	0	154	0
8-9	0	0	177	188	210	224	242	257
9-10	0	0	259	318	309	378	355	435
10-11	0	0	213	236	253	281	291	323
11-12	0	0	268	240	319	286	367	329
12-13	0	0	111	189	132	225	151	259
13-14	0	0	264	187	314	223	361	256
14-15	0	0	202	233	240	277	277	319
15-16	0	0	145	173	172	206	198	237
16-17	0	0	38	91	46	109	52	125
17-18	0	0	0	19	0	23	0	26
CARS								
7-8	0	0	151	8	180	9	207	11
8-9	0	0	88	5	105	6	121	6
9-10	0	0	75	8	89	10	103	11
10-11	0	0	57	38	68	46	79	52
11-12	0	0	61	61	73	73	84	84
12-13	0	0	67	67	80	80	92	92
13-14	0	0	56	56	66	66	76	76
14-15	0	0	23	93	28	110	32	127
15-16	0	0	7	137	9	163	10	188
16-17	0	0	7	134	8	160	10	184
17-18	0	0	12	106	14	126	16	145

Table 3.5
Daily Trips During Peak Week - No-Build Option

Zone:	1 New Terminal		6 Middle Harbor		7 7th Street		8 Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	231	0	117	0	139	0	160	0
8-9	362	386	183	195	218	232	251	268
9-10	532	652	270	330	321	393	369	452
10-11	436	484	221	245	263	292	303	336
11-12	550	493	279	250	331	297	381	342
12-13	227	388	115	197	137	234	157	269
13-14	541	384	274	195	326	231	375	266
14-15	415	478	210	242	250	288	288	331
15-16	297	356	150	180	179	214	206	247
16-17	79	188	40	95	47	113	54	130
17-18	0	39	0	20	0	24	0	27
CARS								
7-8	299	16	151	8	180	9	207	11
8-9	175	9	88	5	105	6	121	6
9-10	148	16	75	8	89	10	103	11
10-11	113	76	57	38	68	46	79	52
11-12	121	121	61	61	73	73	84	84
12-13	133	133	67	67	80	80	92	92
13-14	110	110	56	56	66	66	76	76
14-15	46	183	23	93	28	110	32	127
15-16	14	271	7	137	9	163	10	188
16-17	14	265	7	134	8	160	10	184
17-18	23	208	12	106	14	126	16	145

Table 3.6
Daily Trips During Peak Week - Option A

Zone:	1 New Terminal		6 Middle Harbor		7 7th Street		8 Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	87	0	114	0	136	0	176	0
8-9	136	145	179	191	213	227	275	293
9-10	200	245	263	323	313	384	405	496
10-11	164	182	216	240	257	285	332	368
11-12	207	185	272	244	324	290	418	375
12-13	85	146	112	192	134	229	173	295
13-14	203	144	268	190	318	226	411	292
14-15	156	179	205	236	244	281	315	363
15-16	111	134	147	176	175	209	226	270
16-17	30	70	39	93	46	110	60	143
17-18	0	15	0	19	0	23	0	30
CARS								
7-8	115	6	152	8	180	9	232	12
8-9	67	4	89	5	105	6	136	7
9-10	57	6	75	8	89	10	116	13
10-11	44	29	58	38	68	46	88	59
11-12	46	46	61	61	73	73	94	94
12-13	51	51	67	67	80	80	103	103
13-14	42	42	56	56	66	66	86	86
14-15	18	70	23	93	28	110	36	143
15-16	5	104	7	138	9	163	11	211
16-17	5	102	7	135	8	160	11	206
17-18	9	80	12	106	14	126	18	162

Table 3.7
Daily Trips During Peak Week - Option B

Zone:	1 New Terminal		6 Middle Harbor		7 7th Street		8 Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	259	0	118	0	140	0	161	0
8-9	406	432	184	196	219	233	252	269
9-10	596	730	271	332	322	394	371	454
10-11	489	542	222	246	264	293	304	337
11-12	616	552	280	251	333	298	383	343
12-13	254	435	115	197	137	235	158	270
13-14	606	430	275	195	327	232	377	267
14-15	464	535	211	243	251	289	289	333
15-16	332	398	151	181	179	215	207	248
16-17	88	210	40	95	48	113	55	131
17-18	0	44	0	20	0	24	0	27
CARS								
7-8	333	18	151	8	180	9	207	11
8-9	195	10	88	5	105	6	121	6
9-10	166	18	75	8	89	10	103	11
10-11	127	84	57	38	68	46	79	52
11-12	134	134	61	61	73	73	84	84
12-13	148	148	67	67	80	80	92	92
13-14	123	123	56	56	66	66	76	76
14-15	51	204	23	93	28	110	32	127
15-16	16	303	7	137	9	163	10	188
16-17	16	296	7	134	8	160	10	184
17-18	26	232	12	106	14	126	16	145

Table 3.8
Daily Trips During Peak Week - Option C

Zone:	1 New Terminal		6 Middle Harbor		7 7th Street		8 Outer Harbor	
	Entries	Exits	Entries	Exits	Entries	Exits	Entries	Exits
TRUCKS								
7-8	248	0	117	0	140	0	161	0
8-9	388	413	184	196	219	233	252	268
9-10	571	699	270	331	322	394	370	453
10-11	468	519	222	246	264	293	303	337
11-12	589	528	279	250	332	298	382	343
12-13	243	416	115	197	137	235	158	270
13-14	580	412	275	195	327	232	376	267
14-15	444	512	210	243	250	289	288	332
15-16	318	381	151	181	179	215	206	247
16-17	84	201	40	95	47	113	55	130
17-18	0	42	0	20	0	24	0	27
CARS								
7-8	319	17	151	8	180	9	207	11
8-9	187	10	88	5	105	6	121	6
9-10	159	18	75	8	89	10	103	11
10-11	121	81	57	38	68	46	79	52
11-12	129	129	61	61	73	73	84	84
12-13	142	142	67	67	80	80	92	92
13-14	118	118	56	56	66	66	76	76
14-15	49	196	23	93	28	110	32	127
15-16	15	290	7	137	9	163	10	188
16-17	15	284	7	134	8	160	10	184
17-18	25	223	12	106	14	126	16	145

Table 3.9
Daily Trips During Peak Week - Option D

Figure 3.2 illustrates the total truck trips and automobile trips for the different options.

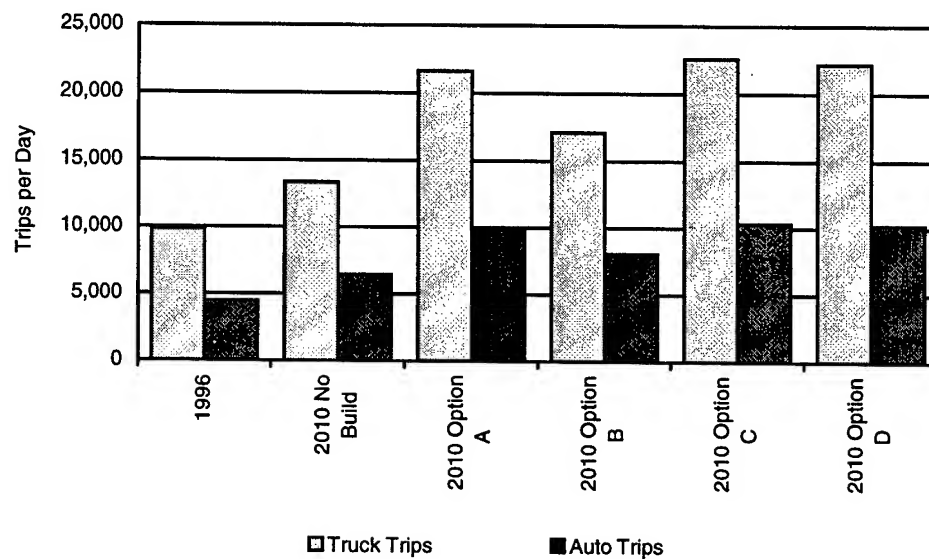


Figure 3.2
Daily Truck and Car Trips During Peak Week

Table 3.10 describes the total daily truck traffic during a peak week that moves from the zones to nearby rail yards in 2010.

Zone	1 NT	6 MH	7 7th St	8 OH	Total
NO-BUILD OPTION					
Total Truck Trips	0	3,760	4,473	5,150	13,383
Truck Trips to Rail Yard	0	215	256	294	765
OPTION A					
Total Truck Trips	7,715	3,908	4,648	5,352	21,623
Truck Trips to Rail Yard	2,640	1,337	1,590	1,831	7,398
OPTION B					
Total Truck Trips	2,898	3,817	4,540	5,865	17,120
Truck Trips to Rail Yard	490	646	768	992	2,895
OPTION C					
Total Truck Trips	8,639	3,923	4,667	5,373	22,602
Truck Trips to Rail Yard	3,202	1,454	1,730	1,992	8,377
OPTION D					
Total Truck Trips	8,268	3,917	4,660	5,365	22,210
Truck Trips to Rail Yard	2,973	1,408	1,675	1,929	7,986

Table 3.10
2010 Daily Truck Traffic During Peak Week

Figure 3.3 illustrates the total daily truck trips and trips to the Rail Yards for each option.

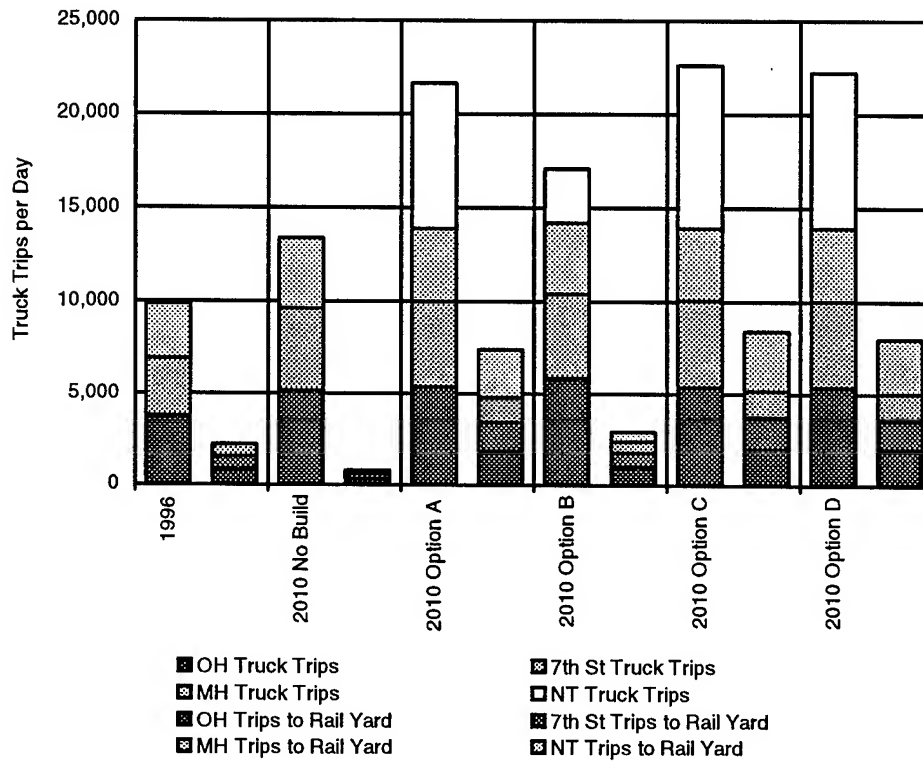


Figure 3.3
Daily Truck Trips During Peak Week

APPENDIX A: PROJECTED SHIP CALLS AT THE PORT OF OAKLAND IN 2010

JWD has estimated future ship call statistics based on data from 1988 through 1995 provided by the Port of Oakland. Statistics on lifts per call are shown in Figure A.1.

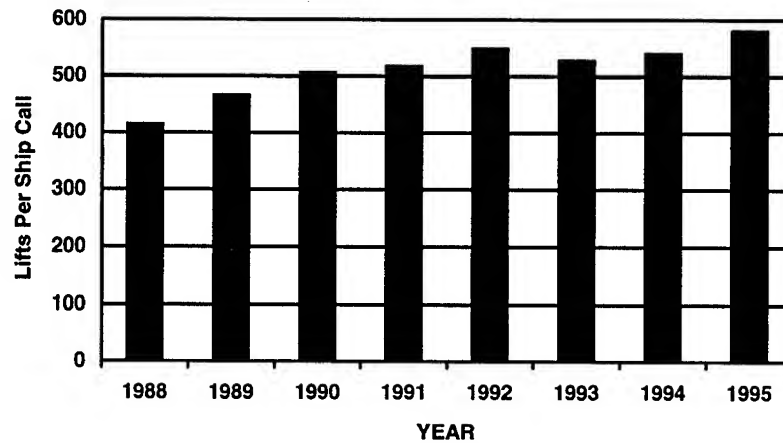


Figure A.1
Lifts per Ship Call at the Port of Oakland

The growth in lifts per ship call from 1988 to 1995 represents an annual growth rate of 4.9 %. Assuming this trend continues until 2010, the average ship call in 2010 will consist of 1196 ship lifts.

Presently, most of the container ships that call at the Port of Oakland are in the 2500 to 4000 TEUs capacity range. In general, ship sizes will increase in the future. Ships that call at Oakland may or may not increase accordingly with the world fleet as depth limitations may prohibit large ships from calling at Oakland. The largest ships in the world have a capacity of approximately 6000 TEUs and a depth requirement of about 45 feet. The channel into the Port of Oakland is presently about 40 to 42 feet deep. The Port plans to dredge the channel in order to accept larger ships. This should allow the number of ship lifts per call to continue to grow as predicted.

The ship call size of 1196 lifts was used to compute the expected number of ship calls for each of the project alternatives shown in Table A.1.

Option	Lifts per Year	Ship Calls per Year	Ship Calls per Day
1995	848,536	1,460	4.0
No Build	1,258,925	1,053	2.9
A	1,957,211	1,637	4.5
B	1,586,582	1,327	3.6
C	2,037,782	1,704	4.7
D	2,005,554	1,678	4.6

Table A.1
Ship Calls by Project Option

Assuming each ship is worked by two dockside cranes for two shifts per day and that the dockside crane productivity remains about 24 lifts per hour as it is today, each ship will be worked for an average of 1.6 days. Ships will spend longer than this in port due to docking and tie down time as well as other miscellaneous delays. Ships will be in Port for an average of two days per call, provided the Port continues to work ships seven days per week.

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Appendix J.3
Rail Terminal Traffic Analysis

PART ONE OF RAIL TERMINAL TRAFFIC ANALYSIS

FLEET INDUSTRIAL SUPPLY CENTER OAKLAND
DISPOSAL AND REUSE EIS/EIR

JOB NO. WC0337 PHASE 03

CONTENTS: PLATE 1 - SHOWING THE CAPACITY OF EACH RAIL TERMINAL EXISTING UNDER EACH ALTERNATIVE OPERATING THREE SEPARATE LEVELS OF EFFICIENCY. ALSO, THE PROJECTED EXTIMATED NUMBER OF GATE MOVES AND TRUCK TRUCK TRIPS THAT WOULD BE REQUIRED TO OPERATE EACH TERMINAL AT EACH OF THOSE LEVELS.

The assumptions made to generate the numbers are given at the bottom of the table. The assumptions are based on information obtained from existing rail terminals and model terminals that have been conceptually designed under previous studies.

November 5, 1996

PART TWO OF RAIL TERMINAL TRAFFIC ANALYSIS

FLEET INDUSTRIAL SUPPLY CENTER OAKLAND DISPOSAL AND REUSE EIS/EIR

JOB NO. WC0337 PHASE 03

CONTENTS: Pages 1 - 3	Show the estimated type and number of trains that will be travelling over those segments of railroad shown on the diagrammatic map on PLATE 11, page 4 under each alternative.
Page 4 - PLATE 11	Shows the total number of trains in each segment for each alternative and a diagrammatic map of the railroad segments.
Page 5	Describes the rationale used in estimating the number of intermodal trains that will be generated by the existing rail terminals under each alternative at the operating level predicted by JWD and tabulated by Dowling and Assoc.
Pages 6 - 17	Show the gate down time at the crossings in each rail segment calculated by the formula shown and based on the estimated trains shown by pages 1 - 3.

The assumptions made to estimate the numbers of trains are based on information given by the various railroads, information taken from the recent Union Pacific/ Southern Pacific merger and previous studies.

November 5, 1996

PLATE I - TRAFFIC ESTIMATES TO &

PLATE I - TRAFFIC ESTIMATES TO &								
ALTERNATIVE	ANNUAL LIFTS (CAPACITY) (in thousands)				TOTAL ANNUAL LIFTS ths'ds (CAPACITY)	(I) GATE MOVES (CAPACITY) (per day)		
	OPERATION	UP	SP	BNSF		UP	SP	BNSF
CURRENT		(a)	(b)	(c) Richm'nd				(Richmon
	CURRENT	102	158	24	284	431	867	101
	SUSTAINABLE	(d)	(e)	(c)	409	570	1,056	101
	CONSTRAINED	(d)	(e)	(c)	478	650	1,267	101
NO BUILD (ALT E)		(d)	(e)	(c) Richm'nd				
	SUSTAINABLE	(d)	(e)	(c)	409	570	1,056	101
	CONSTRAINED	(d)	(e)	(c)	478	650	1,267	101
	GRIDLOCKED	(d)	(e)	(c)	577	819	1,516	101
A		(I)						
	SUSTAINABLE	1,242			1,242	5,244		
	CONSTRAINED	(I)			1,458	6,156		
	GRIDLOCKED	(I)			1,782	7,524		
B		(d)	(f)	(I) Port				
	SUSTAINABLE	(d)	(f)	(I)	773	570	1,064	1,630
	CONSTRAINED	(d)	(f)	(I)	859	650	1,165	1,811
	GRIDLOCKED	(d)	(f)	(I)	1,109	819	1,524	2,339
C		(g)	(h) Port					(Port)
	SUSTAINABLE	(g)	(h)		1,209	2,571		2,533
	CONSTRAINED	(g)	(h)		1,310	2,787		2,744
	GRIDLOCKED	(g)	(h)		1,734	3,690		3,631
D		(k)						
	SUSTAINABLE	(k)			1,156	4,881		
	CONSTRAINED	(k)			1,357	5,730		
	GRIDLOCKED	(k)			1,658	7,000		

(a) Very recent figure obtained from UP.

(b) Very recent figure obtained from SP.

(c) 15% of total 160,000 lifts recently obtained from BN/SF (15% attributable to Port of Oakland).

(d) Joint Intermodal Terminal (JIT) Operational Analysis Report, page 39.

(e) JIT Operational Analysis Report, page 42 (adjusted for lift demand Alt E).

(f) Preliminary Draft, Proposed Expanded Southern Pacific Intermodal Terminal - Version 3.

(g) Preliminary Draft, Proposed Expanded Southern Pacific Intermodal Terminal - Version 2.

(h) JIT Operating Plan Report, page 57 (based on track under crane).

(i) JIT Operating Plan Report, page 57 (reducing track under crane by tracks #6 and #7, lost to support tracks).

Note: It is assumed that under Alternate B the rail terminal facilities would expand capacity in accordance with the demand for lifts, and there would be close to a 50/50 split between UP (merged) and BNSF.

(j) JIT Operating Plan Report, page 2 of Appendix A.

MOVEMENTS TO & FROM INTERMODAL FACILITIES (RR)										
(l) MOVES (CAPACITY) (per day)		TOTAL DAILY GATE MOVES (CAPACITY)	(m) DAILY TRUCK TRIPS Based on Gate Moves			TOTAL DAILY TRUCK TRIPS	(n) JOBS ON SITE Based on Lifts (Capacity)			TOTAL RAIL TERMINAL JOBS
SP	BNSF		UP	SP	BNSF		UP	SP	BNSF	
867	(Richmond) 101	1,199	689	1,067	162	1,919	55	72	N/A	127
1,056	101	1,727	912	1,689	162	2,763	67	107	N/A	174
1,267	101	2,018	1,040	2,027	162	3,229	70	123	N/A	193
1,056	101	1,727	912	1,689	(Richmond) 162	2,763	67	107	N/A	174
1,267	101	2,018	1,040	2,027	162	3,229	70	123	N/A	193
1,516	101	2,436	1,311	2,425	162	3,898	82	130	N/A	212
5,244		5,244	8,390			8,390	350			350
6,156		6,156	9,850			9,850	400			400
7,524		7,524	12,038			12,038	427			427
1,064	1,630	3,264	912	1,702	(Port) 2,608	5,222	67	150	167	384
1,165	1,811	3,627	1,040	1,865	2,898	5,803	70	167	178	415
1,524	2,339	4,682	1,311	2,439	3,743	7,492	82	183	204	469
71	(Port) 2,533	5,105	4,114		(Port) 4,053	8,167	210		208	418
87	2,744	5,531	4,459		4,391	8,850	222		220	442
90	3,631	7,321	5,904		5,810	11,714	256		254	510
4,881		4,881	7,809			7,809	343			343
5,730		5,730	9,167			9,167	375			375
7,000		7,000	11,201			11,201	418			418

(k) JIT Operating Plan Report, page 2 of Appendix A (proportioned by track under crane).

(l) Average daily gate moves calculated by dividing annual lifts by 360 days and multiplying by 1.52 gate moves/lift.

(m) The number of daily truck trips is 1.6 times the Gate Moves, a factor thought to be conservatively high.

Note: At rail terminals, moves through the gates involving empty chassis are counted as gate moves.

(n) The number of employees are taken from known and modeled facilities, the jobs on site under gridlocked conditions are 1.43 times the number required for sustainable conditions minus 15% assumed constant (supervisors etc).

Notes:

- Under "Annual Lifts" three levels of operation are referred to by the table: 1. Sustainable is near comfortable capacity wherein lift costs are minimized, 2. Constrained is beyond the comfortable capacity of the infrastructure and a premium is paid in cost per lift, 3. Gridlocked is operating at maximum capacity with maximum effort.

B. Gate Moves = Gate Transactions. They do not include truck tractors without chassis or trailers (Bobtails).

C. The table on page 2 shows comparison between lift capacities and demand (projected number of Intl., domestic, & trailers.)

ALTERNATIVE: CURRENT (POST-MERGER) (BELOW SUSTAINABLE)

Segment	TRAIN TYPE															TOTAL DAILY TRAINS
	EASTBOUND (AWAY FROM 7TH STREET)							WESTBOUND (TOWARDS 7TH STREET)								
	1200 PASS	600 PASS	BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW	1200 PASS	600 PASS	BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW		
A	2	8		4	2			2	8		3	3			32	
B	2	8		4	2	**2	2	2	8		3	3	**2	2	40	
C	2	8					2	2	8					2	24	
D	*5	*13					2	*5	*13					2	40	
E	*5	*13		2		2		*5	*13		2		2		44	
F	1	3		2		2		1	3		2		2		16	
* INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF																
** BNSF TRAINS																
PASS - PASSENGER TRAIN																
BNSF-IM - BURLINGTON NORTHERN SANTA FE INTERMODAL TRAIN																
TF-M - THRU FREIGHT, MANIFEST																
IM - INTERMODAL TRAIN																
LOC - LOCAL FREIGHT TRAIN																
SW - SWITCHER TRAIN																

ALTERNATIVE: NO BUILD (GRIDLOCKED)

Segment	TRAIN TYPE															TOTAL DAILY TRAINS
	EASTBOUND (AWAY FROM 7TH STREET)							WESTBOUND (TOWARDS 7YH STREET)								
	1200 PASS	600 PASS	6000 BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW	1200 PASS	600 PASS	6000 BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW		
A	2	10		4	***4			2	10		5	***5			42	
B	2	10		4	4	**2	1	2	10		4	5	**2	1	47	
C	2	10					1	2	10					1	26	
D	*5	*15					1	*5	*15					1	42	
E	*5	*15		2		2		*5	*15		2		2		48	
F	1	5		2		2		1	5		2		2		20	

ALTERNATIVE: A (SUSTAINABLE)

Segment	TRAIN TYPE														TOTAL DAILY TRAINS
	EASTBOUND (AWAY FROM 7TH STREET)							WESTBOUND (TOWARDS 7TH STREET)							
	1200 PASS	600 PASS	6000 BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW	1200 PASS	600 PASS	6000 BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW	
A	2	10	***4	4	5			2	10	***4	4	5			50
B	2	10	***4	4	5	**1		2	10	***4	4	5	**1	1	54
C	2	10					1	2	10					1	26
D	*5	*15					1	*5	*15					2	43
E	*5	*15		2		2		*5	*15		2		2		48
F	1	5		2		2		1	5		2		2		20

* INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF

** BNSF TRAINS

*** ASSUMES BNSF HAS 40% TO 50% OF THE INTERMODAL TRAIN TRAFFIC

PASS - PASSENGER TRAIN

BNSF-IM - BURLINGTON NORTHERN SANTA FE INTERMODAL TRAIN

TF-M - THRU FREIGHT, MANIFEST

IM - INTERMODAL TRAIN

LOC - LOCAL FREIGHT TRAIN

SW - SWITCHER TRAIN

ALTERNATIVE: B (SUSTAINABLE)

Segment	TRAIN TYPE														TOTAL DAILY TRAINS
	EASTBOUND (AWAY FROM 7TH STREET)							WESTBOUND (TOWARDS 7TH STREET)							
	1200 PASS	600 PASS	6000 BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW	1200 PASS	600 PASS	6000 BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW	
A	2	10	3	4	3			2	10	3	4	3			44
B	2	10	3	4	3	**1	1	2	10	3	4	3	**1	1	48
C	2	10					1	2	10					1	26
D	*5	*15					1	*5	*15					1	42
E	*5	*15		2		2		*5	*15		2		2		48
F	1	5		2		2		1	5		2		2		20

* INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF

** BNSF TRAINS

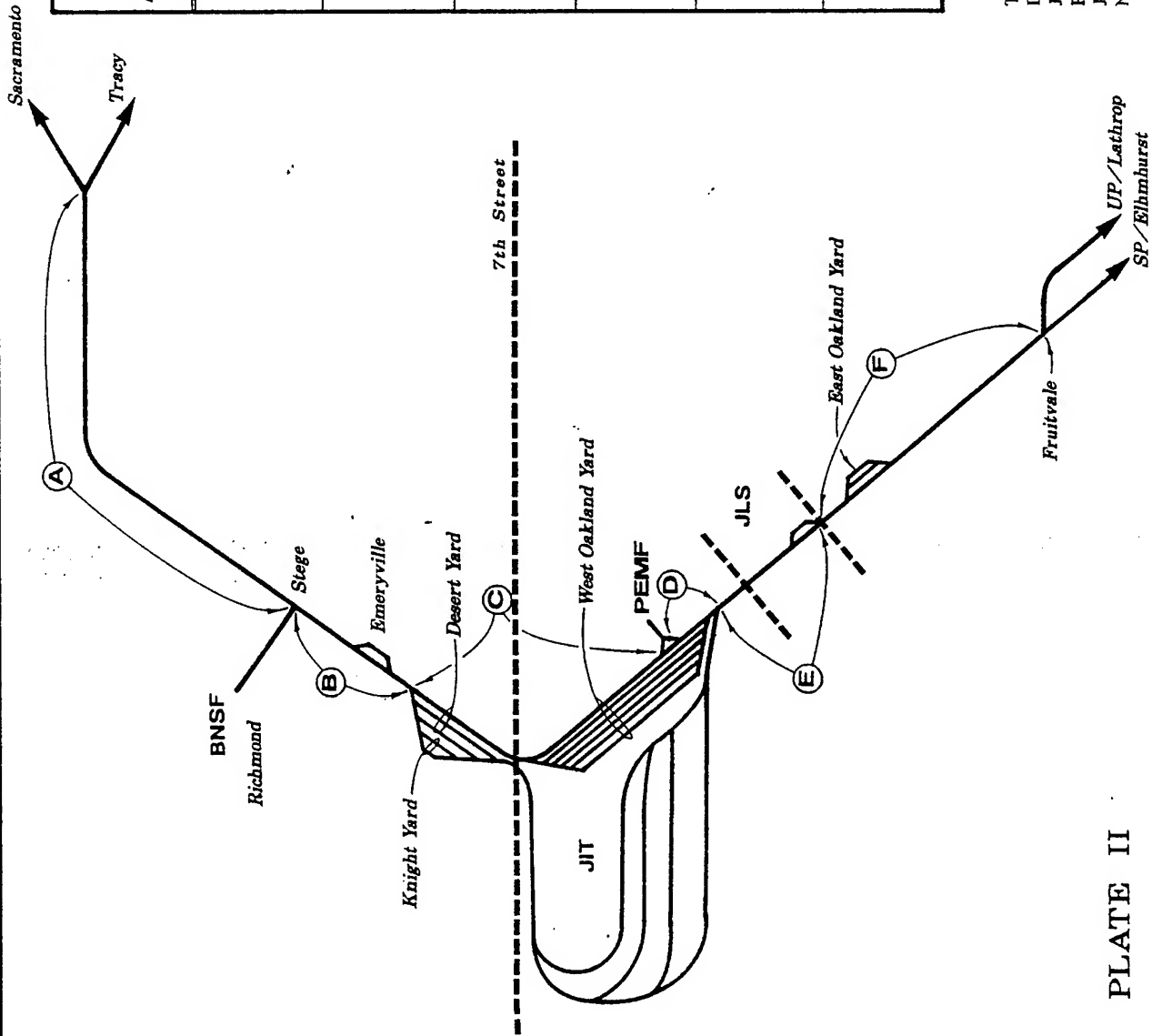
ALTERNATIVE: C (CONSTRAINED)

Segment	TRAIN TYPE														TOTAL DAILY TRAINS
	EASTBOUND (AWAY FROM 7TH STREET)							WESTBOUND (TOWARDS 7TH STREET)							
	1200 PASS	600 PASS	6000 BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW	1200 PASS	600 PASS	6000 BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW	
A	2	10	5	4	4			2	10	5	4	5			51
B	2	10	5	4	4	**1	*1	2	10	5	4	5	**1	1	55
C	2	10					1	2	10					1	26
D	*5	*15					1	*5	*15					1	42
E	*5	*15		2		2		*5	*15		2		2		48
F	1	5		2		2		1	5		2		2		20
* INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF															
** BNSF TRAINS															
PASS - PASSENGER TRAIN															
BNSF-IM - BURLINGTON NORTHERN SANTA FE INTERMODAL TRAIN															
TF-M - THRU FREIGHT, MANIFEST															
IM - INTERMODAL TRAIN															
LOC - LOCAL FREIGHT TRAIN															
SW - SWITCHER TRAIN															

ALTERNATIVE: D (CONSTRAINED)

Segment	TRAIN TYPE														TOTAL DAILY TRAINS
	EASTBOUND (AWAY FROM 7TH STREET)							WESTBOUND (TOWARDS 7TH STREET)							
	1200 PASS	600 PASS	6000 BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW	1200 PASS	600 PASS	6000 BNSF-IM	6000 TF-M	6000 IM	1200 LOC	300 SW	
A	2	10	***4	4	5			2	10	***4	4	6			51
B	2	10	***4	4	5	**1	1	2	10	***4	4	6	**1	1	55
C	2	10					1	2	10					1	26
D	*5	*15					1	*5	*15					1	42
E	*5	*15		2		2		*5	*15		2		2		48
F	1	5		2		2		1	5		2		2		20

* INCLUDES DEADHEAD PASSENGER TRAIN MOVEMENTS BETWEEN JLS AND PEMF



ALTERNATIVE	TRAIN TRAFFIC IN SEGMENT					
	A	B	C	D	E	F
CURRENT	32	40	24	40	44	16
NO BUILD (ALT E)	42	47	26	42	48	20
A	50	54	26	43	48	20
B	44	48	26	42	48	20
C	51	55	26	42	48	20
D	51	55	26	42	48	20

LEGEND

TRAIN TRAFFIC - AVERAGE NO. OF TRAINS IN EACH RAIL SEGMENT DAILY
 BNSF.....BURLINGTON NORTHERN SANTA FE INTERMODAL FACILITY
 JIT.....JOINT INTERMODAL TERMINAL -PORT OF OAKLAND
 PEMF.....AMTRAK - PASSENGER EQUIPMENT MAINTENANCE FACILITY
 JLS.....JACK LONDON SQUARE
 Note: Siege is the junction of the Richmond Branch and the Main Line to Sacramento.

TRAIN ANALYSIS AND ASSUMPTIONS

A typical 6000 ft. train is assumed to carry an average of 8.75 trailers and 166.25 containers (175 vans). The trailers are most commonly carried on 89 ft. flatcars and a space utilization of approximately 80% is assumed. The containers are most commonly carried on doublestack platforms 61 ft. in length. A slot utilization factor of 1.83 containers per platform is used here because the Union Pacific used this factor for projecting numbers of intermodal trains in their recent merger application.

A rail terminal with a lift capacity of 100,000 annual lifts would require the following average number of trains per day.

100,000 divided by 360 days divided by 175 equals 1.587302 trains/day

Using this model, the relative number of trains required for each of the rail terminals at the projected level of operation under each alternative follow:

Alternative	Facility	Lifts in Thousands	Function	Multiplier	Function	Ave. Daily Trains
Current (Existing)	UP	1.02	times	1.59	equals	1.62 trains/day
	SP	1.58	times	1.59	equals	2.51 trains/day
	Richmond	0.24	times	1.59	equals	0.38 trains/day
	Merged UP					4.13 trains/day
	Total					4.51 trains/day
No Build Gridlock	UP	1.94	times	1.59	equals	3.08 trains/day
	SP	3.59	times	1.59	equals	5.70 trains/day
	Richmond	0.24	times	1.59	equals	0.38 trains/day
	Merged UP					8.78 trains/day
	Total					9.16 trains/day
Alt A Sust'n'ble	JIT	11.40	times	1.59	equals	18.09 trains/day
Alt B Sust'n'ble	UP	1.05	times	1.59	equals	1.67 trains/day
	SP	3.12	times	1.59	equals	4.96 trains/day
	BNSFport	3.51		1.59	equals	5.57 trains/day
	Merged UP					6.63 trains/day
	Total					12.21 trains/day
Alt C Constr'nd	Merged UP	6.05	times	1.59	equals	9.61 trains/day
	BNSFport	6.14	times	1.59	equals	9.75 trains/day
	Total					19.36 trains/day
Alt D Constr'nd	JIT	11.89	times	1.59	equals	18.87 trains/day

See "Traffic Estimates To & From Intermodal Facilities (RR)" for levels of operation, pg.1, Part 1.

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Current Eastb'nd	8-600	4.91	8-600	4.91	13-600	12.40	3-600	1.67
	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	2-6000	3.27	2-6000	3.27	2-1200	2.81	2-1200	1.68
			2-1200	1.45				
			2-300	1.11				
Sub-Total	16.16		18.73		32.32		8.48	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	8-600	5.21					3-600	2.01
	4-6000	8.05					2-6000	7.80
	2-6000	4.02					2-1200	2.36
	2-1200	1.60						
	2-300	1.15						
Sub-Total	21.64						13.01	
	67th,66th,65th St.'s						5th Avenue	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Current Westb'nd	8-600	4.91	8-600	4.91	13-600	12.40	3-600	1.67
	3-6000	4.90	3-6000	4.90	2-6000	10.07	2-6000	4.40
	3-6000	4.90	3-6000	4.90	2-1200	2.81	2-1200	1.68
			2-1200	1.45				
			2-300	1.11				
Sub-Total	16.16		18.73		32.32		8.48	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	8-600	5.21					3-600	2.01
	3-6000	6.04					2-6000	7.80
	3-6000	6.04					2-1200	2.36
	2-1200	1.60						
	2-300	1.15						
Sub-Total	67th,66th,65th St's.		21.64		5th Avenue		13.01	
Totals	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
East & West	32.33		37.46		64.63		16.96	
From all Trains in Minutes			67th,66th,65th St's.				5th Avenue	
			43.28				26.03	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	
No Build Eastb'nd	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
			2-1200	1.45				
			1-300	0.56				
Sub-Total	20.66		22.67		34.22		8.87	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	10-600	6.51					5-600	3.35
	4-6000	8.05					2-6000	0.73
	4-6000	8.05					2-1200	2.36
	2-1200	1.60						
	1-300	0.58						
Sub-Total	26.39						7.28	
	67th,66th,65th St.'s						5th Avenue	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
No Build Westb'nd	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
			2-1200	1.45				
			1-300	0.56				
Sub-Total	20.66		22.67		34.22		9.59	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	10-600	6.51					5-600	3.35
	4-6000	8.05					2-6000	7.80
	4-6000	8.05					2-1200	2.36
	2-1200	1.60						
	1-300	0.58						
Sub-Total	67th,66th,65th St.'s		26.39		5th Avenue		14.35	
Totals	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
East & West	41.32		45.34		68.44444		18.46	
From all Trains in Minutes			67th,66th,65th St's.				5th Avenue	
			52.78				21.63	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "A" Eastb'nd	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	5-6000	8.17	5-6000	8.17				
			1-1200	0.73				
			1-300	0.56				
Sub-Total	28.83		30.11		34.22		9.59	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	10-600	6.51					5-600	3.35
	4-6000	8.05					2-6000	7.80
	4-6000	8.05					2-1200	2.36
	5-6000	10.06						
	1-1200	0.80						
	1-300	0.58						
Sub-Total	35.65						14.35	
	67th,66th,65th St.'s						5th Avenue	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "A" Westb'nd	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	5-6000	8.17	5-6000	8.17				
			1-1200	0.73				
			1-300	0.56				
Sub-Total	28.83		30.11		34.22		9.59	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	10-600	6.51					5-600	3.35
	4-6000	8.05					2-6000	7.80
	4-6000	8.05					2-1200	2.36
	5-6000	10.06						
	1-1200	0.80						
	1-300	0.58						
Sub-Total	67th,66th,65th St.'s		35.65		5th Avenue		14.35	
Totals	Cutting 57.65		Gil-Ban 60.22		Mark-Oak 68.44		29th-37th 19.18	
E and W	67th,66th,65th St's.		71.29		5th Avenue		28.71	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "B" Eastb'nd	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
	3-6000	4.90	3-6000	4.90	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	3-6000	4.90	3-6000	4.90				
			1-1200	0.73				
			1-300	0.56				
Sub-Total	23.93		25.21		34.22		9.59	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	10-600	6.51					5-600	3.35
	3-6000	6.04					2-6000	7.80
	4-6000	8.05					2-1200	2.36
	3-6000	6.04						
	1-1200	0.80						
	1-300	0.58						
Sub-Total	29.61						14.35	
	67th,66th,65th St.'s						5th Avenue	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "B" Westb'nd	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
	3-6000	4.90	3-6000	4.90	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	3-6000	4.90	3-6000	4.90				
			1-1200	0.73				
			1-300	0.56				
Sub-Total	23.93		25.21		34.22		9.59	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	10-600	6.51					5-600	3.35
	3-6000	6.04					2-6000	7.80
	4-6000	8.05					2-1200	2.36
	3-6000	6.04						
	1-1200	0.80						
	1-300	0.58						
Sub-Total	67th,66th,65th St.'s		29.61		5th Avenue		14.35	
Totals	Cutting	47.85	Gil-Banc	50.42	Mark-Oak	68.44444	29th-37th	19.18
E & W	67th,66th,65th St's.		59.22		5th Avenue		28.71	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "C" Eastb'nd	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
	5-6000	8.17	5-6000	8.17	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	4-6000	6.54	4-6000	6.54				
			1-1200	0.73				
			1-300	0.56				
Sub-Total	28.83		30.11		34.22		9.59	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	10-600	6.51					5-600	3.35
	5-6000	10.06					2-6000	7.80
	4-6000	8.05					2-1200	2.36
	4-6000	8.05						
	1-1200	0.80						
	1-300	0.58						
Sub-Total	35.65						14.35	
	67th,66th,65th St.'s						5th Avenue	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "C" Westb'nd	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
	5-6000	8.17	5-6000	8.17	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	5-6000	8.17	5-6000	8.17				
			1-1200	0.73				
			1-300	0.56				
Sub-Total	30.46		31.74		34.22		9.59	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	10-600	6.51					5-600	3.35
	5-6000	10.06					2-6000	7.80
	4-6000	8.05					2-1200	2.36
	5-6000	10.06						
	1-1200	0.80						
	1-300	0.58						
Sub-Total	67th,66th,65th St.'s		37.66		5th Avenue		14.35	
Totals	Cutting	59.29	Gil-Banc	61.85	Mark-Oak	68.44444	29th-37th	19.18
E & W	67th,66th,65th St's.		73.30		5th Avenue		28.71	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "D"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Eastb'nd	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	5-6000	8.17	5-6000	8.17				
			1-1200	0.73				
			1-300	0.56				
Sub-Total	28.83		30.11		34.22		9.59	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
	2-1200	1.60					1-1200	0.84
	10-600	6.51					5-600	3.35
	4-6000	8.05					2-6000	7.80
	4-6000	8.05					2-1200	2.36
	5-6000	10.06						
	1-1200	0.80						
	1-300	0.58						
Sub-Total	35.65						14.35	
	67th,66th,65th St.'s						5th Avenue	

TIME FOR A TRAIN OF GIVEN LENGTH TO CLEAR A CROSSING

Constant	Length	Constant	Speed MPH	Time SEC	Time MIN
ie. $T=30+(1200/(1.47*45))=48$ seconds or 0.8 minutes					
30	6000	1.47	60	98.03	1.63
30	1200	1.47	60	43.61	0.73
30	600	1.47	60	36.80	0.61
30	300	1.47	60	33.40	0.56
30	6000	1.47	45	120.70	2.01
30	1200	1.47	45	48.14	0.80
30	600	1.47	45	39.07	0.65
30	300	1.47	45	34.54	0.58
30	6000	1.47	40	132.04	2.20
30	1200	1.47	40	50.41	0.84
30	600	1.47	40	40.20	0.67
30	300	1.47	40	35.10	0.59
30	6000	1.47	20	234.08	3.90
30	1200	1.47	20	70.82	1.18
30	600	1.47	20	50.41	0.84
30	300	1.47	20	40.20	0.67
30	6000	1.47	15	302.11	5.04
30	1200	1.47	15	84.42	1.41
30	600	1.47	15	57.21	0.95
30	300	1.47	15	43.61	0.73

GATE DOWN TIME AT SUBJECT CROSSINGS

Note: The first number is the limit speed for passenger trains- the second for freight trains.

Speed	60-60		60-60		15-15		60-40	
Segment	A		B		E		F	
Alt. & Dir.	2-1200	1.45	2-1200	1.45	5-1200	7.04	1-1200	0.73
Alt "D"	10-600	6.13	10-600	6.13	15-600	14.30	5-600	2.78
Westb'nd	4-6000	6.54	4-6000	6.54	2-6000	10.07	2-6000	4.40
	4-6000	6.54	4-6000	6.54	2-1200	2.81	2-1200	1.68
	6-6000	9.80	6-6000	9.80				
			1-1200	0.73				
			1-300	0.56				
Sub-Total	30.46		31.74		34.22		9.59	
	Cutting Blvd.		Gilman-Bancroft		Market-Oak		29th-37th Avenues	
Speed	45-45						40-20	
Segment	B						F	
			2-1200	1.60			1-1200	0.84
			10-600	6.51			5-600	3.35
			4-6000	8.05			2-6000	7.80
			4-6000	8.05			2-1200	2.36
			6-6000	12.07				
			1-1200	0.80				
			1-300	0.58				
Sub-Total	67th,66th,65th St.'s 37.66				5th Avenue 14.35			
Totals	Cutting 59.29	Gil-Banc 61.85	Mark-Oak 68.44	29th-37th 19.18				
E & W	67th,66th,65th St's. 73.30				5th Avenue 28.71			

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Appendix J.4
Marine and Rail Traffic Background Data and Assumptions

Table J.4-1
FISCO/Port Vision 2000 EIS/EIR
Marine / Rail Traffic Assumptions

Marine Container Distribution

Type of Trip	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
To / From Rail	20%	5%	31.1%	15.0%	33.8%	32.8%
Over-the-road	80%	95%	68.9%	85.0%	66.2%	67.2%

Marine / Rail Factors

Parameter	Assumptions		Comment
	Marine	Rail	
TEUs / Container	1.75		Rail peak factor accounts for slow weekends.
1996/1995 Growth	107%		
TEUs / Acre / Year			
1995	3,168		
1996	3,390		
2010	4,700		
Weeks per year	52	52	
Days per week	5	7	
Peak Week / Average Week	1.25	1.19	
Peak Weekday/Avg. Day of Wee	1	1.33	
Gate Moves / Lift	1.33	1.52	
Truck Trips / Gate Move - Total	Varies	1.6	
Over-the-Road	1.65		
Marine - Rail	1.9		

Table J.4-2
FISCO/Port Vision 2000 EIS/EIR
Rail Background Data

Peak / Average Activity Factor
Based on 2010 Train Arrival and Departures (1)

	<u>Total</u>
Peak	32
Average	27
Factor	1.19

Peak Day / Average Day Factor Calculation
Based On Rail Terminal Gate Transactions (2)

<u>Day</u>	<u>Railroad</u>		<u>Total</u>
	<u>SP</u>	<u>UP</u>	
Mon	950	800	1,750
Tue	950	970	1,920
Wed	950	900	1,850
Thu	950	800	1,750
Fri	950	500	1,450
Sat	250	700	950
Sun	<u>200</u>	<u>250</u>	<u>450</u>
Total	5,200	4,920	10,120
Average	743	703	1,446
Maximum	<u>950</u>	<u>970</u>	<u>1,920</u>
Factor	1.28	1.38	1.33

(1) Provided by Nolte and Associates.

(2) Joint Intermodal Terminal Operating Plan, Summit/Lynch consulting Engineers, et. al., Feb. 1995.

**Table J.4-3
FISCO/Port Vision 2000 EIS/EIR
Marine Traffic**

Marine Terminal Acres

Zone / Terminal	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0.0	0.0	260.0	100.0	290.0	278.0
6 Middle Harbor	131.7	131.7	131.7	131.7	131.7	131.7
7 7th St. Harbor	156.7	156.7	156.7	156.7	156.7	156.7
8 Outer Harbor	180.4	180.4	180.4	202.4	180.4	180.4
Total	468.7	468.7	728.7	590.7	758.7	746.7

Annual Lifts (Containers)

Zone / Terminal	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0	0	698,286	268,571	778,857	746,629
6 Middle Harbor	255,109	353,709	353,709	353,709	353,709	353,709
7 7th St. Harbor	303,458	420,744	420,744	420,744	420,744	420,744
8 Outer Harbor	349,366	484,395	484,395	543,535	484,395	484,395
Total (rounded)	907,934	1,258,848	1,957,134	1,586,559	2,037,705	2,005,477

Weekday Truck Trips - Over-the-Road

Zone / Terminal	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0	0	5,076	2,409	5,440	5,294
6 Middle Harbor	2,153	3,545	2,571	3,172	2,470	2,508
7 7th St. Harbor	2,561	4,217	3,059	3,773	2,939	2,983
8 Outer Harbor	2,949	4,855	3,521	4,874	3,383	3,434
Total	7,663	12,617	14,227	14,228	14,232	14,219

Weekday Truck Trips - To and From Rail

Zone / Terminal	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0	0	2,638	489	3,198	2,975
6 Middle Harbor	620	215	1,336	645	1,452	1,409
7 7th St. Harbor	737	256	1,590	767	1,728	1,677
8 Outer Harbor	849	294	1,830	991	1,989	1,930
Total	2,206	765	7,395	2,891	8,368	7,992

Weekday Truck Trips - Total

Zone / Terminal	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0	0	7,714	2,898	8,638	8,269
6 Middle Harbor	2,773	3,760	3,908	3,817	3,923	3,917
7 7th St. Harbor	3,299	4,473	4,648	4,540	4,666	4,660
8 Outer Harbor	3,798	5,149	5,351	5,865	5,372	5,365
Total	9,869	13,382	21,622	17,119	22,600	22,210

Table J.4-4
FISCO/Port Vision 2000 EIS/EIR
Rail Traffic

Annual Lifts - Sustainable

Zone / Terminal	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
3 J.I.T.			1,242,000	450,000	600,000	1,156,000
4 SP	158,000	250,000		400,000	609,000	
5 UP	102,000	135,000		135,000		
11 BN/SF	24,000	24,000				
Total	284,000	409,000	1,242,000	985,000	1,209,000	1,156,000

Annual Lifts - Constrained

Zone / Terminal	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
3 J.I.T.			1,458,000	490,000	650,000	1,357,000
4 SP		300,000		450,000	660,000	
5 UP		154,000		154,000		
11 BN/SF		24,000				
Total		478,000	1,458,000	1,094,000	1,310,000	1,357,000

Annual Lifts - Gridlocked

Zone / Terminal	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
3 J.I.T.			1,782,000	645,000	860,000	1,658,000
4 SP		359,000		574,000	874,000	
5 UP		194,000		194,000		
11 BN/SF		24,000				
Total		577,000	1,782,000	1,413,000	1,734,000	1,658,000

**Table J.4-5
FISCO/Port Vision 2000 EIS/EIR
Traffic at the Port of Oakland**

Annual Lifts - Marine Terminals

Alternative	Marine Terminal Container Throughput			
	Total	To / From Rail		Other (over-the-road)
		Percent	Number	
Existing	907,934	20%	181,587	726,347
No Project	1,258,848	5%	62,942	1,195,906
Max. Marine/Max. Rail	1,957,134	31.1%	608,669	1,348,465
Min. Marine/Min. Rail	1,586,559	15.0%	237,984	1,348,575
Max. Marine/Min. Rail	2,037,705	33.8%	688,744	1,348,961
Reduced Harbor Fill	2,005,477	32.8%	657,796	1,347,680

Annual Lifts - Railyards

Alternative	Rail Intermodal Throughput							
	Capacity	Operating Efficiency	To / From Marine		Other (domestic & trailers)		Total	Surplus Capacity (1)
			Number	Percent	Number	Percent		
Existing	284,000	Existing	181,587	64%	102,413	36%	284,000	0
No Project	577,000	Gridlocked	62,942	11%	514,058	89%	577,000	0 (2)
Max. Marine/Max. Rail	1,242,000	Sustainable	608,669	53%	531,000	47%	1,139,669	102,331
Min. Marine/Min. Rail	773,000	Sustainable	237,984	31%	531,000	69%	768,984	4,016
Max. Marine/Min. Rail	1,310,000	Constrained	688,744	56%	531,000	44%	1,219,744	90,256
Reduced Harbor Fill	1,357,000	Constrained	657,796	55%	531,000	45%	1,188,796	168,204

Weekday Truck Trips

Alternative	Marine Terminals				Rail Intermodal Terminals				
	Total	To / From Rail		Other (over-the-road)	Total	To / From Marine		Other (domestic & trailers)	
		Number	Percent			Number	Percent	Number (3)	Percent
Existing	9,869	2,206	22.4%	7,663	2,987	2,206	74%	781	26%
No Project	13,382	765	5.7%	12,617	5,209	765	15%	4,444	85%
Max. Marine/Max. Rail	21,622	7,395	34.2%	14,227	11,985	7,395	62%	4,590	38%
Min. Marine/Min. Rail	17,119	2,891	16.9%	14,228	7,482	2,891	39%	4,590	61%
Max. Marine/Min. Rail	22,600	8,368	37.0%	14,232	12,958	8,368	65%	4,590	35%
Reduced Harbor Fill	22,210	7,992	36.0%	14,219	12,582	7,992	64%	4,590	36%

(1) The surplus capacity for each alternative shows the number of additional lifts that could be accommodated at the indicated operating efficiency level.

(2) The domestic and trailer demand at the railyards would be 531,000 (Summit Lynch 1995); therefore, 17,000 containers will be diverted.

(3) Domestic and trailer truck trips at the railyards (for the project alternatives) are proportional to the number of annual lifts.

Table J.4-6
FISCO/Port Vision 2000 EIS/EIR
Marine Traffic

Marine Terminal Acres

Zone / Terminal	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0.0	0.0	260.0	100.0	290.0	278.0
6 Middle Harbor	131.7	131.7	131.7	131.7	131.7	131.7
7 7th St. Harbor	156.7	156.7	156.7	156.7	156.7	156.7
8 Outer Harbor	180.4	180.4	180.4	202.4	180.4	180.4
Total	468.7	468.7	728.7	590.7	758.7	746.7

Employees

Employees / Acre	2.73	3.91	3.91	3.91	3.91	3.91
Zone / Terminal	Project Alternative					
	Existing	No Project	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1 New Harbor	0	0	1,018	391	1,135	1,088.2
6 Middle Harbor	360	516	516	516	516	515.5
7 7th St. Harbor	428	613	613	613	613	613.2
8 Outer Harbor	492.6	~ 706.0	706.0	792.2	706.0	706.0
Total	1,280.3	1,834.7	2,852.4	2,312.3	2,969.8	2,922.9

A	AM Trips	348	566
U	AM Trips / Employee	0.27	0.31
T	PM Trips	359	514
O	PM Trips / Employee	0.28	0.28

Appendix J.5
Peak Hour Marine Terminal Truck Traffic Generation

Table J.5-1
Marine Terminal Travel Characteristics
Existing Conditions

Auto Trips

Hour Beginning	Zone 6			Zone 7			Zone 8			Total		
	Middle Harbor Terminal			7th Street Terminal			Outer Harbor Terminal			In	Out	Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6:00	93	5	98	110	6	116	127	7	134	330	18	348
7:00	106	6	112	126	7	133	145	8	153	377	21	398
8:00	62	3	65	73	4	77	85	4	89	220	11	231
9:00	52	6	58	62	7	69	72	8	80	186	21	207
10:00	40	27	67	48	32	80	55	37	92	143	96	239
11:00	43	43	86	51	51	102	58	58	116	152	152	304
12:00	47	47	94	56	56	112	64	64	128	167	167	334
13:00	39	39	78	46	46	92	53	53	106	138	138	276
14:00	16	65	81	19	77	96	22	89	111	57	231	288
15:00	5	96	101	6	114	120	7	131	138	18	341	359
16:00	5	94	99	6	112	118	7	128	135	18	334	352
17:00	8	74	82	10	88	98	11	101	112	29	263	292

Truck Trips

Hour Beginning	Zone 6			Zone 7			Zone 8			Total		
	Middle Harbor Terminal			7th Street Terminal			Outer Harbor Terminal			In	Out	Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6:00	73	0	73	76	0	76	91	0	91	240	0	240
7:00	90	0	90	94	0	94	113	0	113	297	0	297
8:00	140	149	289	147	156	303	176	188	364	463	493	956
9:00	206	252	458	216	264	480	259	317	576	681	833	1,514
10:00	169	187	356	177	196	373	212	236	448	558	619	1,177
11:00	213	191	404	223	200	423	268	240	508	704	631	1,335
12:00	88	150	238	92	157	249	110	189	299	290	496	786
13:00	209	149	358	219	156	375	263	187	450	691	492	1,183
14:00	160	185	345	168	194	362	202	233	435	530	612	1,142
15:00	115	138	253	120	144	264	144	173	317	379	455	834
16:00	30	73	103	32	76	108	38	91	129	100	240	340
17:00	0	15	15	0	16	16	0	19	19	0	50	50

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour Beginning	Zone 6			Zone 7			Zone 8			Total		
	Middle Harbor Terminal			7th Street Terminal			Outer Harbor Terminal			In	Out	Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6:00	146	0	146	152	0	152	182	0	182	480	0	480
7:00	180	0	180	188	0	188	226	0	226	594	0	594
8:00	280	298	578	294	312	606	352	376	728	926	986	1,912
9:00	412	504	916	432	528	960	518	634	1,152	1,362	1,666	3,028
10:00	338	374	712	354	392	746	424	472	896	1,116	1,238	2,354
11:00	426	382	808	446	400	846	536	480	1,016	1,408	1,262	2,670
12:00	176	300	476	184	314	498	220	378	598	580	992	1,572
13:00	418	298	716	438	312	750	526	374	900	1,382	984	2,366
14:00	320	370	690	336	388	724	404	466	870	1,060	1,224	2,284
15:00	230	276	506	240	288	528	288	346	634	758	910	1,668
16:00	60	146	206	64	152	216	76	182	258	200	480	680
17:00	0	30	30	0	32	32	0	38	38	0	100	100

Total Passenger Car Equivalents for Trucks and Autos

Hour Beginning	Zone 6			Zone 7			Zone 8			Total		
	Middle Harbor Terminal			7th Street Terminal			Outer Harbor Terminal			In	Out	Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6:00	239	5	244	262	6	268	309	7	316	810	18	828
7:00	286	6	292	314	7	321	371	8	379	971	21	992
8:00	342	301	643	367	316	683	437	380	817	1,146	997	2,143
9:00	464	510	974	494	535	1,029	590	642	1,232	1,548	1,687	3,235
10:00	378	401	779	402	424	826	479	509	988	1,259	1,334	2,593
11:00	469	425	894	497	451	948	594	538	1,132	1,560	1,414	2,974
12:00	223	347	570	240	370	610	284	442	726	747	1,159	1,906
13:00	457	337	794	484	358	842	579	427	1,006	1,520	1,122	2,642
14:00	336	435	771	355	465	820	426	555	981	1,117	1,455	2,572
15:00	235	372	607	246	402	648	295	477	772	776	1,251	2,027
16:00	65	240	305	70	264	334	83	310	393	218	814	1,032
17:00	8	104	112	10	120	130	11	139	150	29	363	392

Table J.5-2
Marine Terminal Travel Characteristics
No Project Alternative

Auto Trips

Hour Beginning	Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	151	8	159	180	9	189	207	11	218	538	28	566
8:00	88	5	93	105	6	111	121	6	127	314	17	331
9:00	75	8	83	89	10	99	103	11	114	267	29	296
10:00	57	38	95	68	46	114	79	52	131	204	136	340
11:00	61	61	122	73	73	146	84	84	168	218	218	436
12:00	67	67	134	80	80	160	92	92	184	239	239	478
13:00	56	56	112	66	66	132	76	76	152	198	198	396
14:00	23	93	116	28	110	138	32	127	159	83	330	413
15:00	7	137	144	9	163	172	10	188	198	26	488	514
16:00	7	134	141	8	160	168	10	184	194	25	478	503
17:00	12	106	118	14	126	140	16	145	161	42	377	419

Truck Trips

Hour Beginning	Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	113	0	113	134	0	134	154	0	154	401	0	401
8:00	177	188	365	210	224	434	242	257	499	629	669	1,298
9:00	259	318	577	309	378	687	355	435	790	923	1,131	2,054
10:00	213	236	449	253	281	534	291	323	614	757	840	1,597
11:00	268	240	508	319	286	605	367	329	696	954	855	1,809
12:00	111	189	300	132	225	357	151	259	410	394	673	1,067
13:00	264	187	451	314	223	537	361	256	617	939	666	1,605
14:00	202	233	435	240	277	517	277	319	596	719	829	1,548
15:00	145	173	318	172	206	378	198	237	435	515	616	1,131
16:00	38	91	129	46	109	155	52	125	177	136	325	461
17:00	0	19	19	0	23	23	0	26	26	0	68	68

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour Beginning	Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	226	0	226	268	0	268	308	0	308	802	0	802
8:00	354	376	730	420	448	868	484	514	998	1,258	1,338	2,596
9:00	518	636	1,154	618	756	1,374	710	870	1,580	1,846	2,262	4,108
10:00	426	472	898	506	562	1,068	582	646	1,228	1,514	1,680	3,194
11:00	536	480	1,016	638	572	1,210	734	658	1,392	1,908	1,710	3,618
12:00	222	378	600	264	450	714	302	518	820	788	1,346	2,134
13:00	528	374	902	628	446	1,074	722	512	1,234	1,878	1,332	3,210
14:00	404	466	870	480	554	1,034	554	638	1,192	1,438	1,658	3,096
15:00	290	346	636	344	412	756	396	474	870	1,030	1,232	2,262
16:00	76	182	258	92	218	310	104	250	354	272	650	922
17:00	0	38	38	0	46	46	0	52	52	0	136	136

Total Passenger Car Equivalents for Trucks and Autos

Hour Beginning	Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	377	8	385	448	9	457	515	11	526	1,340	28	1,368
8:00	442	381	823	525	454	979	605	520	1,125	1,572	1,355	2,927
9:00	593	644	1,237	707	766	1,473	813	881	1,694	2,113	2,291	4,404
10:00	483	510	993	574	608	1,182	661	698	1,359	1,718	1,816	3,534
11:00	597	541	1,138	711	645	1,356	818	742	1,560	2,126	1,928	4,054
12:00	289	445	734	344	530	874	394	610	1,004	1,027	1,585	2,612
13:00	584	430	1,014	694	512	1,206	798	588	1,386	2,076	1,530	3,606
14:00	427	559	986	508	664	1,172	586	765	1,351	1,521	1,988	3,509
15:00	297	483	780	353	575	928	406	662	1,068	1,056	1,720	2,776
16:00	83	316	399	100	378	478	114	434	548	297	1,128	1,425
17:00	12	144	156	14	172	186	16	197	213	42	513	555

Table J.5-3
Marine Terminal Travel Characteristics
Maximum Marine/Maximum Rail Alternative

Auto Trips

Hour Beginning	Zone 1			Zone 6			Zone 7			Zone 8			Total		
	New Harbor Terminal			Middle Harbor Terminal			7th Street Terminal			Outer Harbor Terminal					
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	299	16	315	151	8	159	180	9	189	207	11	218	837	44	881
8:00	175	9	184	88	5	93	105	6	111	121	6	127	489	26	515
9:00	148	16	164	75	8	83	89	10	99	103	11	114	415	45	460
10:00	113	76	189	57	38	95	68	46	114	79	52	131	317	212	529
11:00	121	121	242	61	61	122	73	73	146	84	84	168	339	339	678
12:00	133	133	266	67	67	134	80	80	160	92	92	184	372	372	744
13:00	110	110	220	56	56	112	66	66	132	76	76	152	308	308	616
14:00	46	183	229	23	93	116	28	110	138	32	127	159	129	513	642
15:00	14	271	285	7	137	144	9	163	172	10	188	198	40	759	799
16:00	14	265	279	7	134	141	8	160	168	10	184	194	39	743	782
17:00	23	208	231	12	106	118	14	126	140	16	145	161	65	585	650

Truck Trips

Hour Beginning	Zone 1			Zone 6			Zone 7			Zone 8			Total		
	Outer Harbor Terminal			Middle Harbor Terminal			7th Street Terminal			Outer Harbor Terminal					
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	231	0	231	117	0	117	139	0	139	160	0	160	647	0	647
8:00	362	386	748	183	195	378	218	232	450	251	268	519	1,014	1,081	2,095
9:00	532	652	1,184	270	330	600	321	393	714	369	452	821	1,492	1,827	3,319
10:00	436	484	920	221	245	466	263	292	555	303	336	639	1,223	1,357	2,580
11:00	550	493	1,043	279	250	529	331	297	628	381	342	723	1,541	1,382	2,923
12:00	227	388	615	115	197	312	137	234	371	157	269	426	636	1,088	1,724
13:00	541	384	925	274	195	469	326	231	557	375	266	641	1,516	1,076	2,592
14:00	415	478	893	210	242	452	250	288	538	288	331	619	1,163	1,339	2,502
15:00	297	356	653	150	180	330	179	214	393	206	247	453	832	997	1,829
16:00	79	188	267	40	95	135	47	113	160	54	130	184	220	526	746
17:00	0	39	39	0	20	20	0	24	24	0	27	27	0	110	110

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour Beginning	Zone 1			Zone 6			Zone 7			Zone 8			Total		
	Outer Harbor Terminal			Middle Harbor Terminal			7th Street Terminal			Outer Harbor Terminal					
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	462	0	462	234	0	234	278	0	278	320	0	320	1,294	0	1,294
8:00	724	772	1,496	366	390	756	436	464	900	502	536	1,038	2,028	2,162	4,190
9:00	1,064	1,304	2,368	540	660	1,200	642	786	1,428	738	904	1,642	2,984	3,654	6,638
10:00	872	968	1,840	442	490	932	526	584	1,110	606	672	1,278	2,446	2,714	5,160
11:00	1,100	986	2,086	558	500	1,058	662	594	1,256	762	684	1,446	3,082	2,764	5,846
12:00	454	776	1,230	230	394	624	274	468	742	314	538	852	1,272	2,176	3,448
13:00	1,082	768	1,850	548	390	938	652	462	1,114	750	532	1,282	3,032	2,152	5,184
14:00	830	956	1,786	420	484	904	500	576	1,076	576	662	1,238	2,326	2,678	5,004
15:00	594	712	1,306	300	360	660	358	428	786	412	494	906	1,664	1,994	3,658
16:00	158	376	534	80	190	270	94	226	320	108	260	368	440	1,052	1,492
17:00	0	78	78	0	40	40	0	48	48	0	54	54	0	220	220

Total Passenger Car Equivalents for Trucks and Autos

Hour Beginning	Zone 1			Zone 6			Zone 7			Zone 8			Total		
	Outer Harbor Terminal			Middle Harbor Terminal			7th Street Terminal			Outer Harbor Terminal					
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	761	16	777	385	8	393	458	9	467	527	11	538	2,131	44	2,175
8:00	899	781	1,680	454	395	849	541	470	1,011	623	542	1,165	2,517	2,188	4,705
9:00	1,212	1,320	2,532	615	668	1,283	731	796	1,527	841	915	1,756	3,399	3,699	7,098
10:00	985	1,044	2,029	499	528	1,027	594	630	1,224	685	724	1,409	2,763	2,926	5,689
11:00	1,221	1,107	2,328	619	561	1,180	735	667	1,402	846	768	1,614	3,421	3,103	6,524
12:00	587	909	1,496	297	461	758	354	548	902	406	630	1,036	1,644	2,548	4,192
13:00	1,192	878	2,070	604	446	1,050	718	528	1,246	826	608	1,434	3,340	2,460	5,800
14:00	876	1,139	2,015	443	577	1,020	528	686	1,214	608	789	1,397	2,455	3,191	5,646
15:00	608	983	1,591	307	497	804	367	591	958	422	682	1,104	1,704	2,753	4,457
16:00	172	641	813	87	324	411	102	386	488	118	444	562	479	1,795	2,274
17:00	23	286	309	12	146	158	14	174	188	16	199	215	65	805	870

Table J.5-4
Marine Terminal Travel Characteristics
Minimum Marine/Minimum Rail Alternative

Auto Trips

Hour Beginning	Zone 1 New Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	115	6	121	152	8	160	180	9	189	232	12	244	679	35	714
8:00	67	4	71	89	5	94	105	6	111	136	7	143	397	22	419
9:00	57	6	63	75	8	83	89	10	99	116	13	129	337	37	374
10:00	44	29	73	58	38	96	68	46	114	88	59	147	258	172	430
11:00	46	46	92	61	61	122	73	73	146	94	94	188	274	274	548
12:00	51	51	102	67	67	134	80	80	160	103	103	206	301	301	602
13:00	42	42	84	56	56	112	66	66	132	86	86	172	250	250	500
14:00	18	70	88	23	93	116	28	110	138	36	143	179	105	416	521
15:00	5	104	109	7	138	145	9	163	172	11	211	222	32	616	648
16:00	5	102	107	7	135	142	8	160	168	11	206	217	31	603	634
17:00	9	80	89	12	106	118	14	126	140	18	162	180	53	474	527

Truck Trips

Hour Beginning	Zone 1 Outer Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	87	0	87	114	0	114	136	0	136	176	0	176	513	0	513
8:00	136	145	281	179	191	370	213	227	440	275	293	568	803	856	1,659
9:00	200	245	445	263	323	586	313	384	697	405	496	901	1,181	1,448	2,629
10:00	164	182	346	216	240	456	257	285	542	332	368	700	969	1,075	2,044
11:00	207	185	392	272	244	516	324	290	614	418	375	793	1,221	1,094	2,315
12:00	85	146	231	112	192	304	134	229	363	173	295	468	504	862	1,366
13:00	203	144	347	268	190	458	318	226	544	411	292	703	1,200	852	2,052
14:00	156	179	335	205	236	441	244	281	525	315	363	678	920	1,059	1,979
15:00	111	134	245	147	176	323	175	209	384	226	270	496	659	789	1,448
16:00	30	70	100	39	93	132	46	110	156	60	143	203	175	416	591
17:00	0	15	15	0	19	19	0	23	23	0	30	30	0	87	87

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour Beginning	Zone 1 Outer Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	174	0	174	228	0	228	272	0	272	352	0	352	1,026	0	1,026
8:00	272	290	562	358	382	740	426	454	880	550	586	1,136	1,606	1,712	3,318
9:00	400	490	890	526	646	1,172	626	768	1,394	810	992	1,802	2,362	2,896	5,258
10:00	328	364	692	432	480	912	514	570	1,084	664	736	1,400	1,938	2,150	4,088
11:00	414	370	784	544	488	1,032	648	580	1,228	836	750	1,586	2,442	2,188	4,630
12:00	170	292	462	224	384	608	268	458	726	346	590	936	1,008	1,724	2,732
13:00	406	288	694	536	380	916	636	452	1,088	822	584	1,406	2,400	1,704	4,104
14:00	312	358	670	410	472	882	488	562	1,050	630	726	1,356	1,840	2,118	3,958
15:00	222	268	490	294	352	646	350	418	768	452	540	992	1,318	1,578	2,896
16:00	60	140	200	78	186	264	92	220	312	120	286	406	350	832	1,182
17:00	0	30	30	0	38	38	0	46	46	0	60	60	0	174	174

Total Passenger Car Equivalents for Trucks and Autos

Hour Beginning	Zone 1 Outer Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	289	6	295	380	8	388	452	9	461	584	12	596	1,705	35	1,740
8:00	339	294	633	447	387	834	531	460	991	686	593	1,279	2,003	1,734	3,737
9:00	457	496	953	601	654	1,255	715	778	1,493	926	1,005	1,931	2,699	2,933	5,632
10:00	372	393	765	490	518	1,008	582	616	1,198	752	795	1,547	2,196	2,322	4,518
11:00	460	416	876	605	549	1,154	721	653	1,374	930	844	1,774	2,716	2,462	5,178
12:00	221	343	564	291	451	742	348	538	886	449	693	1,142	1,309	2,025	3,334
13:00	448	330	778	592	436	1,028	702	518	1,220	908	670	1,578	2,650	1,954	4,604
14:00	330	428	758	433	565	998	516	672	1,188	666	869	1,535	1,945	2,534	4,479
15:00	227	372	599	301	490	791	359	581	940	463	751	1,214	1,350	2,194	3,544
16:00	65	242	307	85	321	406	100	380	480	131	492	623	381	1,435	1,816
17:00	9	110	119	12	144	156	14	172	186	18	222	240	53	648	701

Table J.5-5
Marine Terminal Travel Characteristics
Maximum Marine/Minimum Rail Alternative

Auto Trips

Hour Beginning	Zone 1 New Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	333	18	351	151	8	159	180	9	189	207	11	218	871	46	917
8:00	195	10	205	88	5	93	105	6	111	121	6	127	509	27	536
9:00	166	18	184	75	8	83	89	10	99	103	11	114	433	47	480
10:00	127	84	211	57	38	95	68	46	114	79	52	131	331	220	551
11:00	134	134	268	61	61	122	73	73	146	84	84	168	352	352	704
12:00	148	148	296	67	67	134	80	80	160	92	92	184	387	387	774
13:00	123	123	246	56	56	112	66	66	132	76	76	152	321	321	642
14:00	51	204	255	23	93	116	28	110	138	32	127	159	134	534	668
15:00	16	303	319	7	137	144	9	163	172	10	188	198	42	791	833
16:00	16	296	312	7	134	141	8	160	168	10	184	194	41	774	815
17:00	26	232	258	12	106	118	14	126	140	16	145	161	68	609	677

Truck Trips

Hour Beginning	Zone 1 Outer Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	259	0	259	118	0	118	140	0	140	161	0	161	678	0	678
8:00	406	432	838	184	196	380	219	233	452	252	269	521	1,061	1,130	2,191
9:00	596	730	1,326	271	332	603	322	394	716	371	454	825	1,560	1,910	3,470
10:00	489	542	1,031	222	246	468	264	293	557	304	337	641	1,279	1,418	2,697
11:00	616	552	1,168	280	251	531	333	298	631	383	343	726	1,612	1,444	3,056
12:00	254	435	689	115	197	312	137	235	372	158	270	428	664	1,137	1,801
13:00	606	430	1,036	275	195	470	327	232	559	377	267	644	1,585	1,124	2,709
14:00	464	535	999	211	243	454	251	289	540	289	333	622	1,215	1,400	2,615
15:00	332	398	730	151	181	332	179	215	394	207	248	455	869	1,042	1,911
16:00	88	210	298	40	95	135	48	113	161	55	131	186	231	549	780
17:00	0	44	44	0	20	20	0	24	24	0	27	27	0	115	115

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour Beginning	Zone 1 Outer Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	518	0	518	236	0	236	280	0	280	322	0	322	1,356	0	1,356
8:00	812	864	1,676	368	392	760	438	466	904	504	538	1,042	2,122	2,260	4,382
9:00	1,192	1,460	2,652	542	664	1,206	644	788	1,432	742	908	1,650	3,120	3,820	6,940
10:00	978	1,084	2,062	444	492	936	528	586	1,114	608	674	1,282	2,558	2,836	5,394
11:00	1,232	1,104	2,336	560	502	1,062	666	596	1,262	766	686	1,452	3,224	2,888	6,112
12:00	508	870	1,378	230	394	624	274	470	744	316	540	856	1,328	2,274	3,602
13:00	1,212	860	2,072	550	390	940	654	464	1,118	754	534	1,288	3,170	2,248	5,418
14:00	928	1,070	1,998	422	486	908	502	578	1,080	578	666	1,244	2,430	2,800	5,230
15:00	664	796	1,460	302	362	664	358	430	788	414	496	910	1,738	2,084	3,822
16:00	176	420	596	80	190	270	96	226	322	110	262	372	462	1,098	1,560
17:00	0	88	88	0	40	40	0	48	48	0	54	54	0	230	230

Total Passenger Car Equivalents for Trucks and Autos

Hour Beginning	Zone 1 Outer Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	851	18	869	387	8	395	460	9	469	529	11	540	2,227	46	2,273
8:00	1,007	874	1,881	456	397	853	543	472	1,015	625	544	1,169	2,631	2,287	4,918
9:00	1,358	1,478	2,836	617	672	1,289	733	798	1,531	845	919	1,764	3,553	3,867	7,420
10:00	1,105	1,168	2,273	501	530	1,031	596	632	1,228	687	726	1,413	2,889	3,056	5,945
11:00	1,366	1,238	2,604	621	563	1,184	739	669	1,408	850	770	1,620	3,576	3,240	6,816
12:00	656	1,018	1,674	297	461	758	354	550	904	408	632	1,040	1,715	2,661	4,376
13:00	1,335	983	2,318	606	446	1,052	720	530	1,250	830	610	1,440	3,491	2,569	6,060
14:00	979	1,274	2,253	445	579	1,024	530	688	1,218	610	793	1,403	2,564	3,334	5,898
15:00	680	1,099	1,779	309	499	808	367	593	960	424	684	1,108	1,780	2,875	4,655
16:00	192	716	908	87	324	411	104	386	490	120	446	566	503	1,872	2,375
17:00	26	320	346	12	146	158	14	174	188	16	199	215	68	839	907

Table J.5-6
Marine Terminal Travel Characteristics
Reduced Harbor Fill Alternative

Auto Trips

Hour Beginning	Zone 1 New Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	319	17	336	151	8	159	180	9	189	207	11	218	857	45	902
8:00	187	10	197	88	5	93	105	6	111	121	6	127	501	27	528
9:00	159	18	177	75	8	83	89	10	99	103	11	114	426	47	473
10:00	121	81	202	57	38	95	68	46	114	79	52	131	325	217	542
11:00	129	129	258	61	61	122	73	73	146	84	84	168	347	347	694
12:00	142	142	284	67	67	134	80	80	160	92	92	184	381	381	762
13:00	118	118	236	56	56	112	66	66	132	76	76	152	316	316	632
14:00	49	196	245	23	93	116	28	110	138	32	127	159	132	526	658
15:00	15	290	305	7	137	144	9	163	172	10	188	198	41	778	819
16:00	15	284	299	7	134	141	8	160	168	10	184	194	40	762	802
17:00	25	223	248	12	106	118	14	126	140	16	145	161	67	600	667

Truck Trips

Hour Beginning	Zone 1 Outer Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	248	0	248	117	0	117	140	0	140	161	0	161	666	0	666
8:00	388	413	801	184	196	380	219	233	452	252	268	520	1,043	1,110	2,153
9:00	571	699	1,270	270	331	601	322	394	716	370	453	823	1,533	1,877	3,410
10:00	468	519	987	222	246	468	264	293	557	303	337	640	1,257	1,395	2,652
11:00	589	528	1,117	279	250	529	332	298	630	382	343	725	1,582	1,419	3,001
12:00	243	416	659	115	197	312	137	235	372	158	270	428	653	1,118	1,771
13:00	580	412	992	275	195	470	327	232	559	376	267	643	1,558	1,106	2,664
14:00	444	512	956	210	243	453	250	289	539	288	332	620	1,192	1,376	2,568
15:00	318	381	699	151	181	332	179	215	394	206	247	453	854	1,024	1,878
16:00	84	201	285	40	95	135	47	113	160	55	130	185	226	539	765
17:00	0	42	42	0	20	20	0	24	24	0	27	27	0	113	113

Passenger Car Equivalents for Trucks (1 truck = 2 passenger cars)

Hour Beginning	Zone 1 Outer Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	496	0	496	234	0	234	280	0	280	322	0	322	1,332	0	1,332
8:00	776	826	1,602	368	392	760	438	466	904	504	536	1,040	2,086	2,220	4,306
9:00	1,142	1,398	2,540	540	662	1,202	644	788	1,432	740	906	1,646	3,066	3,754	6,820
10:00	936	1,038	1,974	444	492	936	528	586	1,114	606	674	1,280	2,514	2,790	5,304
11:00	1,178	1,056	2,234	558	500	1,058	664	596	1,260	764	686	1,450	3,164	2,838	6,002
12:00	486	832	1,318	230	394	624	274	470	744	316	540	856	1,306	2,236	3,542
13:00	1,160	824	1,984	550	390	940	654	464	1,118	752	534	1,286	3,116	2,212	5,328
14:00	888	1,024	1,912	420	486	906	500	578	1,078	576	664	1,240	2,384	2,752	5,136
15:00	636	762	1,398	302	362	664	358	430	788	412	494	906	1,708	2,048	3,756
16:00	168	402	570	80	190	270	94	226	320	110	260	370	452	1,078	1,530
17:00	0	84	84	0	40	40	0	48	48	0	54	54	0	226	226

Total Passenger Car Equivalents for Trucks and Autos

Hour Beginning	Zone 1 Outer Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
7:00	815	17	832	385	8	393	460	9	469	529	11	540	2,189	45	2,234
8:00	963	836	1,799	456	397	853	543	472	1,015	625	542	1,167	2,587	2,247	4,834
9:00	1,301	1,416	2,717	615	670	1,285	733	798	1,531	843	917	1,760	3,492	3,801	7,293
10:00	1,057	1,119	2,176	501	530	1,031	596	632	1,228	685	726	1,411	2,839	3,007	5,846
11:00	1,307	1,185	2,492	619	561	1,180	737	669	1,406	848	770	1,618	3,511	3,185	6,696
12:00	628	974	1,602	297	461	758	354	550	904	408	632	1,040	1,687	2,617	4,304
13:00	1,278	942	2,220	606	446	1,052	720	530	1,250	828	610	1,438	3,432	2,528	5,960
14:00	937	1,220	2,157	443	579	1,022	528	688	1,216	608	791	1,399	2,516	3,278	5,794
15:00	651	1,052	1,703	309	499	808	367	593	960	422	682	1,104	1,749	2,826	4,575
16:00	183	686	869	87	324	411	102	386	488	120	444	564	492	1,840	2,332
17:00	25	307	332	12	146	158	14	174	188	16	199	215	67	826	893

**Table J.5-7
Marine Terminal Travel Characteristics**

Auto Traffic

	Zone 1 New Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Existing Conditions															
AM Peak															
Traffic Volume				62	3	65	73	4	77	85	4	89	220	11	231
Splits (In - Out)				95%	5%		95%	5%		96%	4%		95%	5%	
Percent of Marine Traffic						28%			33%			39%			100%
PM Peak															
Traffic Volume				5	96	101	6	114	120	7	131	138	18	341	359
Splits (In - Out)				5%	95%		5%	95%		5%	95%		5%	95%	
Percent of Marine Traffic						28%			33%			38%			100%
No Project Alternative															
AM Peak															
Traffic Volume				88	5	93	105	6	111	121	6	127	314	17	331
Splits (In - Out)				95%	5%		95%	5%		95%	5%		95%	5%	
Percent of Marine Traffic						28%			34%			38%			100%
PM Peak															
Traffic Volume				7	137	144	9	163	172	10	188	198	26	488	514
Splits (In - Out)				5%	95%		5%	95%		5%	95%		5%	95%	
Percent of Marine Traffic						28%			33%			39%			100%
Maximum Marine/Maximum Rail Alternative															
AM Peak															
Traffic Volume	175	9	184	88	5	93	105	6	111	121	6	127	489	26	515
Splits (In - Out)	95%	5%		95%	5%		95%	5%		95%	5%		95%	5%	
Percent of Marine Traffic			36%			18%			22%			25%			100%
PM Peak															
Traffic Volume	14	271	285	7	137	144	9	163	172	10	188	198	40	759	799
Splits (In - Out)	5%	95%		5%	95%		5%	95%		5%	95%		5%	95%	
Percent of Marine Traffic			36%			18%			22%			25%			100%
Minimum Marine/Minimum Rail Alternative															
AM Peak															
Traffic Volume	67	4	71	89	5	94	105	6	111	136	7	143	397	22	419
Splits (In - Out)	94%	6%		95%	5%		95%	5%		95%	5%		95%	5%	
Percent of Marine Traffic			17%			22%			26%			34%			100%
PM Peak															
Traffic Volume	5	104	109	7	138	145	9	163	172	11	211	222	32	616	648
Splits (In - Out)	5%	95%		5%	95%		5%	95%		5%	95%		5%	95%	
Percent of Marine Traffic			17%			22%			27%			34%			100%
Maximum Marine/Minimum Rail Alternative															
AM Peak															
Traffic Volume	195	10	205	88	5	93	105	6	111	121	6	127	509	27	536
Splits (In - Out)	95%	5%		95%	5%		95%	5%		95%	5%		95%	5%	
Percent of Marine Traffic			38%			17%			21%			24%			100%
PM Peak															
Traffic Volume	16	303	319	7	137	144	9	163	172	10	188	198	42	791	833
Splits (In - Out)	5%	95%		5%	95%		5%	95%		5%	95%		5%	95%	
Percent of Marine Traffic			38%			17%			21%			24%			100%
Reduced Harbor Fill Alternative															
AM Peak															
Traffic Volume	187	10	197	88	5	93	105	6	111	121	6	127	501	27	528
Splits (In - Out)	95%	5%		95%	5%		95%	5%		95%	5%		95%	5%	
Percent of Marine Traffic			37%			18%			21%			24%			100%
PM Peak															
Traffic Volume	15	290	305	7	137	144	9	163	172	10	188	198	41	778	819
Splits (In - Out)	5%	95%		5%	95%		5%	95%		5%	95%		5%	95%	
Percent of Marine Traffic			37%			18%			21%			24%			100%

Table J.5-8
Marine Terminal Travel Characteristics

Truck Traffic (In passenger car equivalents: 1 truck = 2 cars)

	Zone 1 New Harbor Terminal			Zone 6 Middle Harbor Terminal			Zone 7 7th Street Terminal			Zone 8 Outer Harbor Terminal			Total		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Existing Conditions															
AM Peak															
Traffic Volume				280	298	578	294	312	606	352	376	728	926	986	1,912
Splits (In - Out)				48%	52%		49%	51%		48%	52%		48%	52%	
Percent of Marine Traffic						30%			32%			38%			100%
PM Peak															
Traffic Volume				230	276	506	240	288	528	288	346	634	758	910	1,668
Splits (In - Out)				45%	55%		45%	55%		45%	55%		45%	55%	
Percent of Marine Traffic						30%			32%			38%			100%
No Project Alternative															
AM Peak															
Traffic Volume				354	376	730	420	448	868	484	514	998	1,258	1,338	2,596
Splits (In - Out)				48%	52%		48%	52%		48%	52%		48%	52%	
Percent of Marine Traffic						28%			33%			38%			100%
PM Peak															
Traffic Volume				290	346	636	344	412	756	396	474	870	1,030	1,232	2,262
Splits (In - Out)				46%	54%		46%	54%		46%	54%		46%	54%	
Percent of Marine Traffic						28%			33%			38%			100%
Maximum Marine/Maximum Rail Alternative															
AM Peak															
Traffic Volume	724	772	1,496	366	390	756	436	464	900	502	536	1,038	2,028	2,162	4,190
Splits (In - Out)	48%	52%		48%	52%		48%	52%		48%	52%		48%	52%	
Percent of Marine Traffic			36%			18%			21%			25%			100%
PM Peak															
Traffic Volume	594	712	1,306	300	360	660	358	428	786	412	494	906	1,664	1,994	3,658
Splits (In - Out)	45%	55%		45%	55%		46%	54%		45%	55%		45%	55%	
Percent of Marine Traffic			36%			18%			21%			25%			100%
Minimum Marine/Minimum Rail Alternative															
AM Peak															
Traffic Volume	272	290	562	358	382	740	426	454	880	550	586	1,136	1,606	1,712	3,318
Splits (In - Out)	48%	52%		48%	52%		48%	52%		48%	52%		48%	52%	
Percent of Marine Traffic			17%			22%			27%			34%			100%
PM Peak															
Traffic Volume	222	268	490	294	352	646	350	418	768	452	540	992	1,318	1,578	2,896
Splits (In - Out)	45%	55%		46%	54%		46%	54%		46%	54%		46%	54%	
Percent of Marine Traffic			17%			22%			27%			34%			100%
Maximum Marine/Minimum Rail Alternative															
AM Peak															
Traffic Volume	812	864	1,676	368	392	760	438	466	904	504	538	1,042	2,122	2,260	4,382
Splits (In - Out)	48%	52%		48%	52%		48%	52%		48%	52%		48%	52%	
Percent of Marine Traffic			38%			17%			21%			24%			100%
PM Peak															
Traffic Volume	664	796	1,460	302	362	664	358	430	788	414	496	910	1,738	2,084	3,822
Splits (In - Out)	45%	55%		45%	55%		45%	55%		45%	55%		45%	55%	
Percent of Marine Traffic			38%			17%			21%			24%			100%
Reduced Harbor Fill Alternative															
AM Peak															
Traffic Volume	776	826	1,602	368	392	760	438	466	904	504	536	1,040	2,086	2,220	4,306
Splits (In - Out)	48%	52%		48%	52%		48%	52%		48%	52%		48%	52%	
Percent of Marine Traffic			37%			18%			21%			24%			100%
PM Peak															
Traffic Volume	636	762	1,398	302	362	664	358	430	788	412	494	906	1,708	2,048	3,756
Splits (In - Out)	45%	55%		45%	55%		45%	55%		45%	55%		45%	55%	
Percent of Marine Traffic			37%			18%			21%			24%			100%

Appendix J.6
Peak Hour Project Trip Generation

Table J.6-1
FISCO/Port Vision 2000 EIS/EIR
AM Peak Hour Truck Trip Generation
(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1				
2				
3				
4	74%	238	84	322
5	74%	153	54	208
6	22%	129	449	578
7	22%	135	471	606
8	22%	163	565	728
9				
10				
11		36		

No Project Alternative

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1				
2				
3				
4	15%	92	536	629
5	15%	50	290	340
6	6%	42	688	730
7	6%	50	818	868
8	6%	57	941	998
9				
10				
11		6		

Maximum Marine/Maximum Rail Alternative

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1	34%	512	984	1,496
2				
3	62%	1,433	890	2,323
4				
5				
6	34%	259	497	756
7	34%	308	592	900
8	34%	355	683	1,038
9				
10				
11				

Minimum Marine/Minimum Rail Alternative

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1	17%	95	467	562
2				
3	39%	256	406	662
4	39%	228	361	589
5	39%	77	122	199
6	17%	125	615	740
7	17%	149	731	880
8	17%	192	944	1,136
9				
10				
11				

Maximum Marine/Minimum Rail Alternative

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1	37%	621	1,055	1,676
2				
3	65%	805	442	1,247
4	65%	817	448	1,266
5				
6	37%	281	479	760
7	37%	335	569	904
8	37%	386	656	1,042
9				
10				
11				

Reduced Harbor Fill Alternative

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1	36%	576	1,026	1,602
2				
3	64%	1,549	890	2,439
4				
5				
6	36%	273	487	760
7	36%	325	579	904
8	36%	374	666	1,040
9				
10				
11				

Table J.6-2
FISCO/Port Vision 2000 EIS/EIR
PM Peak Hour Truck Trip Generation
(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1				
2				
3				
4	74%	207	73	281
5	74%	134	47	181
6	22%	113	393	506
7	22%	118	410	528
8	22%	142	492	634
9				
10				
11		32		

No Project Alternative

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1				
2				
3				
4	15%	80	467	548
5	15%	43	253	296
6	6%	36	600	636
7	6%	43	713	756
8	6%	50	820	870
9				
10				
11		5		

Maximum Marine/Maximum Rail Alternative

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1	34%	447	859	1,306
2				
3	62%	1,251	777	2,028
4				
5				
6	34%	226	434	660
7	34%	269	517	786
8	34%	310	596	906
9				
10				
11				

Minimum Marine/Minimum Rail Alternative

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1	17%	83	407	490
2				
3	39%	223	355	578
4	39%	199	315	514
5	39%	67	106	173
6	17%	109	537	646
7	17%	130	638	768
8	17%	168	824	992
9				
10				
11				

Maximum Marine/Minimum Rail Alternative

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1	37%	541	919	1,460
2				
3	65%	702	385	1,088
4	65%	713	391	1,104
5				
6	37%	246	418	664
7	37%	292	496	788
8	37%	337	573	910
9				
10				
11				

Reduced Harbor Fill Alternative

Zone	Intermodal		Over-the-Road Trips	Total Trips
	%	Trips		
1	36%	503	895	1,398
2				
3	64%	1,351	776	2,128
4				
5				
6	36%	239	425	664
7	36%	284	504	788
8	36%	326	580	906
9				
10				
11				

Table J.6-3
FISCO/Port Vision 2000 EIS/EIR
AM Peak Hour Truck Trip Generation (Inbound / Outbound Splits)
(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1					
2					
3					
4	115	123	41	43	322
5	74	79	26	28	208
6	63	67	217	231	578
7	66	70	228	243	606
8	79	84	274	292	728
9					
10					
11	17	19			36

No Project Alternative

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1					
2					
3					
4	45	48	260	276	629
5	24	26	140	149	340
6	20	21	334	355	730
7	24	26	397	422	868
8	28	29	456	485	998
9					
10					
11	3	3			6

Maximum Marine/Maximum Rail Alternative

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1	248	264	476	508	1,496
2					
3	694	739	431	459	2,323
4					
5					
6	125	133	241	257	756
7	149	159	287	306	900
8	172	183	331	352	1,038
9					
10					
11					

Minimum Marine/Minimum Rail Alternative

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1	46	49	226	241	562
2					
3	124	132	197	210	662
4	110	117	175	186	589
5	37	40	59	63	199
6	60	64	298	317	740
7	72	77	354	377	880
8	93	99	457	487	1,136
9					
10					
11					

Maximum Marine/Minimum Rail Alternative

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1	300	320	511	544	1,676
2					
3	390	415	214	228	1,247
4	396	421	217	231	1,266
5					
6	136	145	232	247	760
7	162	173	276	294	904
8	187	199	318	338	1,042
9					
10					
11					

Reduced Harbor Fill Alternative

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1	279	297	497	529	1,602
2					
3	751	799	431	459	2,439
4					
5					
6	132	141	236	251	760
7	158	168	280	298	904
8	181	193	323	343	1,040
9					
10					
11					

Table J.6-4
FISCO/Port Vision 2000 EIS/EIR
PM Peak Hour Truck Trip Generation (Inbound / Outbound Splits)
(in passenger car equivalents: 1 truck = 2 cars)

Existing Conditions

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1					
2					
3					
4	94	113	33	40	281
5	61	73	22	26	181
6	51	62	179	214	506
7	54	64	186	224	528
8	64	77	224	269	634
9					
10					
11	14	17			32

No Project Alternative

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1					
2					
3					
4	37	44	213	255	548
5	20	24	115	138	296
6	17	20	273	327	636
7	20	24	325	388	756
8	23	27	374	447	870
9					
10					
11	2	3			5

Maximum Marine/Maximum Rail Alternative

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1	203	243	391	468	1,306
2					
3	569	682	353	423	2,028
4					
5					
6	103	123	198	237	660
7	122	147	235	282	786
8	141	169	271	325	906
9					
10					
11					

Minimum Marine/Minimum Rail Alternative

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1	38	45	185	222	490
2					
3	102	122	161	193	578
4	90	108	144	172	514
5	31	37	48	58	173
6	50	59	244	293	646
7	59	71	290	348	768
8	76	91	375	449	992
9					
10					
11					

Maximum Marine/Minimum Rail Alternative

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1	246	295	418	501	1,460
2					
3	319	383	175	210	1,088
4	324	389	178	213	1,104
5					
6	112	134	190	228	664
7	133	159	226	271	788
8	153	184	261	312	910
9					
10					
11					

Reduced Harbor Fill Alternative

Zone	Intermodal Trips		Over-the-Road Trips		Total Trips
	Inbound	Outbound	Inbound	Outbound	
1	229	274	407	488	1,398
2					
3	615	737	353	423	2,128
4					
5					
6	109	130	193	232	664
7	129	155	229	275	788
8	148	178	264	316	906
9					
10					
11					

Table J.6-5
FISCO/Port Vision 2000 EIS/EIR
Distribution from Marine Terminals to Rail Terminals
AM Peak Hour

Existing Conditions

Zone	Intermodal	Over-the-Road Trips
1		
2		
3		
4	55.6%	60.8%
5	35.9%	39.2%
6		
7		
8		
9		
10		
11	8.5%	

No Project Alternative

Zone	Intermodal	Over-the-Road Trips
1		
2		
3		
4	62.2%	64.9%
5	33.6%	35.1%
6		
7		
8		
9		
10		
11	4.2%	

Maximum Marine/Maximum Rail Alternative

Zone	Intermodal	Over-the-Road Trips
1		
2		
3	100.0%	100.0%
4		
5		
6		
7		
8		
9		
10		
11		

Minimum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the-Road Trips
1		
2		
3		
4	45.7%	45.7%
5	40.6%	40.6%
6	13.7%	13.7%
7		
8		
9		
10		
11		

Maximum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the-Road Trips
1		
2		
3	49.6%	49.6%
4	50.4%	50.4%
5		
6		
7		
8		
9		
10		
11		

Reduced Harbor Fill Alternative

Zone	Intermodal	Over-the-Road Trips
1		
2		
3	100.0%	100.0%
4		
5		
6		
7		
8		
9		
10		
11		

Table J.6-6
FISCO/Port Vision 2000 EIS/EIR
Distribution from Marine Terminals to Rail Terminals
PM Peak Hour

Existing Conditions

Zone	Intermodal	Over-the-Road Trips
1		
2		
3		
4	55.6%	60.8%
5	35.9%	39.2%
6		
7		
8		
9		
10		
11	8.5%	

No Project Alternative

Zone	Intermodal	Over-the-Road Trips
1		
2		
3		
4	62.2%	64.9%
5	33.6%	35.1%
6		
7		
8		
9		
10		
11	4.2%	

Maximum Marine/Maximum Rail Alternative

Zone	Intermodal	Over-the-Road Trips
1		
2		
3	100.0%	100.0%
4		
5		
6		
7		
8		
9		
10		
11		

Minimum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the-Road Trips
1		
2		
3		
4	45.7%	45.7%
5	40.6%	40.6%
6	13.7%	13.7%
7		
8		
9		
10		
11		

Maximum Marine/Minimum Rail Alternative

Zone	Intermodal	Over-the-Road Trips
1		
2		
3	49.6%	49.6%
4	50.4%	50.4%
5		
6		
7		
8		
9		
10		
11		

Reduced Harbor Fill Alternative

Zone	Intermodal	Over-the-Road Trips
1		
2		
3	100.0%	100.0%
4		
5		
6		
7		
8		
9		
10		
11		

Table J.6-7
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Maximum Marine/Maximum Rail Alternative

Land Use	Amount	Trip Generation	Source	Amount	Trip Generation Rates				Trips Generated					
					AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
					In	Out	In	Out	In	Out	In	Out		
Recreation														
Softball/Baseball	132,000 Sq. Ft.	Developed Regional Park (Included Above) (Included Above) Bay Beach (Included Below) Marina (Included Above)	SANDAG	7.2 Acres	0.48	0.32	0.64	0.96	3	2	5	7		
Recreation Area	130,000 Sq. Ft.													
Nature Study	50,000 Sq. Ft.						2.64	3.96		7	11			
Beach	120,000 Sq. Ft.													
Boat Launch	1 Ramp													
Marina	116 Berths		ITE (420)	150 Berths	0.03	0.05	0.11	0.08	4	8	17	11		
Roller Blading, etc.														
Community														
Snack Bar, etc.	3,000 Sq. Ft.	Recreational Comm Ctr (Included Above) (Included Above) (Included Above)	ITE (495)	11,400 Sq. Ft.	0.67	0.41	0.39	0.99	8	5	4	11		
Ceremonial Events	4,000 Sq. Ft.													
Ceremonial Events	4,400 Sq. Ft.													
Total Trips									15	15	33	40		

Table J.6-8
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Minimum Marine/Minimum Rail Alternative

Land Use	Amount	Trip Generation	Source	Amount	Trip Generation Rates						Trips Generated					
					AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
					In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Recreation Softball/Baseball Recreation Area Beach	132,000 Sq. Ft.	Developed Regional Park (Included Above) Bay Beach	SANDAG	4.9 Acres	0.48	0.32	0.64	0.96	2	2	3	5				
	80,000 Sq. Ft.						2.64	3.96			0	0				
	3,600 Sq. Ft.															
Community Restaurant, etc.	33,600 Sq. Ft.	Recreational Comm Ctr	ITE (495)	33,600 Sq. Ft.	0.67	0.41	0.39	0.99	22	14	13	33				
Total Trips											24	16	16	38		

Table J.6-9

FISCO/Port Vision 2000 EIR/EIS

Public Recreation Area

Maximum Marine/Minimum Rail Alternative

Land Use	Amount	Trip Generation	Source	Amount	Trip Generation Rates				Trips Generated			
					AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
					In	Out	In	Out	In	Out	In	Out
Recreation Softball/Baseball Sports Field Recreation Area Nature Study Beach Roller Blading, etc.	140,000 Sq. Ft.	Developed Regional Park (Included Above) (Included Above) (Included Above) Bay Beach (Included Above)	SANDAG	11.7 Acres	0.48	0.32	0.64	0.96	6	4	7	11
	175,000 Sq. Ft.											
	145,000 Sq. Ft.											
	50,000 Sq. Ft.						2.64	3.96		8	11	
	62,000 Sq. Ft.											
Community Restaurant, etc. Snack Bar, etc.	33,600	Recreational Comm Ctr (Included Above)	ITE (495)	37,600 Sq. Ft.	0.67	0.41	0.39	0.99	25	15	15	37
	4,000 Sq. Ft.											
Total Trips									31	19	30	59

Table J.6-10
FISCO/Port Vision 2000 EIR/EIS
Public Recreation Area
Reduced Harbor Fill Alternative

Land Use	Amount	Trip Generation	Source	Amount	Trip Generation Rates						Trips Generated					
					AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
					In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Recreation Softball/Baseball Sports Field Recreation Area Nature Study Amphitheater Beach	170,000 Sq. Ft.	Developed Regional Park (Included Above) (Included Above) (Included Above) (Included Above) Bay Beach	SANDAG	14.6 Acres	0.48	0.32	0.64	0.96	7	5	9	14				
	75,000 Sq. Ft.															
	200,000 Sq. Ft.															
	100,000 Sq. Ft.															
	90,000 Sq. Ft.															
Community Restaurant, etc.	537,000 Sq. Ft.		SANDAG	12.3 Acres			2.64	3.96			33	49				
	33,600	Recreational Comm Ctr	ITE (495)	33,600 Sq. Ft.	0.67	0.41	0.39	0.99	22	14	13	33				
Total Trips													29	19	55	96

Appendix J.7
Level of Service Calculations

Table J.7-1

NOBLD-AM.CMD		Tue Nov 5, 1996 13:08:31				Page 1-1				NOBLD-AM.CMD		Tue Nov 5, 1996 13:08:31				Page 1-2						
		FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour								FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour												
		Trip Generation Report																				
		Forecast for AM Peak Hour																				
Zone #	Subzone	Amount	Units	Rate	In	Out	Rate	In	Out	Trips In	Trips Out	Total % Of Trips Total	Zone #	Subzone	Amount	Units	Rate	In	Out	Trips In	Trips Out	Total % Of Trips Total

1	FISCO 4 & 5	200.00	Employees	0.28	0.05					56	10	66 1.5										
	Zone 1 Subtotal									56	10	66 1.5										
2	FISCO 1,2,3	500.00	Employees	0.28	0.05					140	25	165 3.8										
	Zone 2 Subtotal									140	25	165 3.8										
4	SP Rail Term	130.00	Employees	0.40	0.09					52	12	64 1.5										
	Zone 4 Subtotal									52	12	64 1.5										
5	UP Rail Term	82.00	Employees	0.40	0.09					33	7	40 0.9										
	Zone 5 Subtotal									33	7	40 0.9										
6	Middle Harbr	516.00	Employees	0.26	0.05					134	26	160 3.7										
	Zone 6 Subtotal									134	26	160 3.7										
7	7th St Harbr	613.00	Employees	0.26	0.05					159	31	190 4.4										
	Zone 7 Subtotal									159	31	190 4.4										
8	Outer Harbor	706.00	Employees	0.26	0.05					184	35	219 5.1										
	Zone 8 Subtotal									184	35	219 5.1										
16	Middle Harbr	1.00	Trucks Inter	20.00	21.00					20	21	41 0.9										
	Zone 16 Subtotal									20	21	41 0.9										
17	7th St Harbr	1.00	Trucks Inter	24.00	26.00					24	26	50 1.2										
	Zone 17 Subtotal									24	26	50 1.2										
18	Outer Harbor	1.00	Trucks Inter	28.00	29.00					28	29	57 1.3										
	Zone 18 Subtotal									28	29	57 1.3										
24	SP Rail Term	1.00	Truck External	260.00	276.00					260	276	536 12.4										
	Zone 24 Subtotal									260	276	536 12.4										
25	UP Rail Term	1.00	Truck External	140.00	149.00					140	149	289 6.7										
	Zone 25 Subtotal									140	149	289 6.7										
26	Middle Harbr	1.00	Truck External	334.00	355.00					334	355	689 15.9										
	Zone 26 Subtotal									334	355	689 15.9										
27	7th St Harbr	1.00	Truck External	397.00	422.00					397	422	819 18.9										
	Zone 27 Subtotal									397	422	819 18.9										
28	Outer Harbor	1.00	Truck External	456.00	485.00					456	485	941 21.8										

TOTAL													Zone 28 Subtotal							456	485	941 21.8

TOTAL													Zone 28 Subtotal							2417	1909	4326 100.0

Table J.7-1 (Continued)

Page 2-1

Tue Nov 5, 1996 13:08:31

NOBLD-AM. CMD

FISCO/Port Vision 2000 EIS/EIR

No Project Alternative

AM Peak Hour

Trip Distribution Report

Percent Of Trips Existing

Zone	4	5	11	12	13	14	15	16
------	---	---	----	----	----	----	----	----

To Gates

1	0.0	0.0	0.0	10.0	30.0	7.0	19.0	19.0	15.0
2	0.0	0.0	0.0	10.0	30.0	7.0	19.0	19.0	15.0
4	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0
5	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0
6	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0
7	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0
8	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0
16	62.2	33.6	0.0	4.2	0.0	0.0	0.0	0.0	0.0
17	62.2	33.6	0.0	4.2	0.0	0.0	0.0	0.0	0.0
18	62.2	33.6	0.0	4.2	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0
25	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0
26	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0
27	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0
28	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0

Tue Nov 5, 1996 13:08:31

NOBLD-AM. CMD

FISCO/Port Vision 2000 EIS/EIR

No Project Alternative

AM Peak Hour

Turning Movement Report

AM Peak Hour

Volume Type	Northbound Left Thru Right	Southbound Left Thru Right	Eastbound Left Thru Right	Westbound Left Thru Right	Total Volume
#3 Maritime/Burma					
Base	5 78	0 0 287	0 0 0	5 0 0	375
Added	0 262	0 0 338	212 144 0	0 0 0	956
Total	5 340	0 0 625	212 144 0	5 0 0	1331
#4 Maritime/14th					
Base	0 91	39 103 261	0 0 0	22 0 87	603
Added	319 147	0 0 202	136 115 0	290 0 0	1209
Total	319 238	39 103 463	136 115 0	290 22 0	1812
#5 Maritime/7th Ext.					
Base	159 0	0 0 334	69 0 37	0 0 0	599
Added	25 466	0 0 488	4 1 0	5 0 0	988
Total	184 466	0 0 488	338 70 0	42 0 0	1587
#6 7th/7th Ext.					
Base	15 0	0 0 0	0 0 0	26 0 54	95
Added	23 118	57 267 137	88 55 399	25 61 469	2017
Total	38 118	57 267 137	88 55 399	25 87 469	2112
#7 Middle Harbor/Gate 2					
Base	53 0 45	0 0 0	0 0 0	39 208 338	683
Added	2 0 28	0 0 0	0 207	10 157 217	621
PassBy	176 0 264	0 0 0	0 0 0	117 176 0	733
Total	231 0 337	0 0 0	0 207	166 541 555	2037
#8 Adeline St./ 3rd St.					
Base	8 0 31	26 0 26	8 6 29	50 59 56	299
Added	0 707	0 0 950	0 0 0	0 0 0	1657
Total	8 707	31 26 950	26 8 6	29 50 59	1956
#12 Maritime/W.Grand/I-880 Ramps					
Base	0 33 0	16 28 47	48 394 438	0 300 9	1313
Added	271 0 134	0 0 0	0 0 403	147 0 0	956
Total	271 33 134	16 28 47	48 394 841	147 300 9	2269
#13 Adeline/5th/I-880 SB Ramps					
Base	0 0 0	72 109 165	256 51 0	0 169 364	1186
Added	153 117 437	0 177 0	0 0 227	546 0 0	1657
Total	153 117 437	72 286 165	256 51 227	546 169 364	2843
#14 Union/5th/I-880 NB Ramps					
Base	0 175 45	0 154 31	24 43 13	205 31 115	836
Added	0 0 227	0 0 0	0 0 0	153 0 0	380
Total	0 175 272	0 154 31	24 43 13	358 31 115	1216

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Traffix 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

J.7-2

Table J.7-1 (Continued)

NOBLD-AM.CMD		Tue Nov 5, 1996 13:08:31		NOBLD-AM.CMD		Tue Nov 5, 1996 13:08:31		Page 3-2		Page 3-3	
		FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		No Project Alternative		AM Peak Hour		AM Peak Hour	
		No Project Alternative		No Project Alternative		No Project Alternative		No Project Alternative		No Project Alternative	
		AM Peak Hour		AM Peak Hour		AM Peak Hour		AM Peak Hour		AM Peak Hour	
Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total
Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume	Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume
#15 7th/I-880 NB Ramp/Frontage Rd.											
Base	0 548 21 17 0 94	0 16 0 0 0 62	1 759			#165	0 0 0 0 -227	0 0 0 -495	0 0 0 0		
Added	564 0 0 0 275	227 2 0 0 8	0 1076			Base	0 0 0 0 227	0 0 0 495	0 0 0 0		
Total	564 548 21 17 0 369	227 18 0 0 70	1 1835			Added	0 0 0 0 -0	0 0 0 -0	0 0 0 0		
#16 7th/I-880 SB Ramp											
Base	0 0 0 0 0 0	0 0 0 0 65	0 65			Base	0 -153 -564	0 0 0 0	0 0 0 0		
Added	0 0 0 0 0 0	0 229 495	0 847	0 1571		Added	0 153 564	0 0 0 0	0 0 0 0		
Total	0 0 0 0 0 0	0 229 495	65 847	0 1636		Total	0 -0 -0	0 0 0 0	0 0 0 0		
#17 14th/I-880 Frontage Rd.											
Base	0 0 89 30 0 0	0 0 0 140	0 6 265			#177	0 0 0 0 -351	0 0 -129	0 0 0 0		
Added	0 227 0 0 275	0 0 0 0 0	0 502			Base	0 0 0 0 351	0 0 129	0 0 0 0		
Total	0 227 89 30 275	0 0 0 140	6 767			Added	0 0 0 0 0	0 0 0 0	0 0 0 0		
#18 W.Grand/I-880 Frontage Rd.											
Base	9 0 0 678 48 6	65 234 12	0 152 449	1653		Base	0 -266 0 0 0	0 -104 -25	0 0 0 0		
Added	0 151 76 0 185	0 134 0 90 147	0 784			Added	0 266 0 0 0	0 104 25	0 0 0 0		
Total	9 151 76 678 233 6	65 368 12 90 299	449 2437			Total	0 -0 0 0 0	0 0 0 0	0 0 0 0		
#138											
Base	0 -156 0 0 -173 -26	0 0 0 0 0	0 -379			#182	0 -370 0 0 -475	0 0 0	0 0 0 0		
Added	0 156 0 0 173 26	0 0 0 0 0	0 379			Base	0 370 0 0 475	0 0 0	0 0 0 0		
Total	0 0 0 0 0 -0	0 0 0 0 0	0 -0			Added	0 -0 0 0 -0	0 0 0	0 0 0 0		
#158											
Base	0 -180 -129 0 0 0	0 0 0 0 0	0 -309			#201	0 0 0 0 0	0 -932	0 0 0 0		
Added	0 180 129 0 0 0	0 0 0 0 0	0 309			Base	0 0 0 0 0	0 932	0 0 0 0		
Total	0 -0 0 0 0 0	0 0 0 0 0	0 0			Added	0 0 0 0 0	0 0 0	0 0 0 0		
#159											
Base	-180 0 0 0 0 0	0 0 0 0 -178	0 -358			#204	0 0 0 -352 -580	0 0 0	0 0 0 0		
Added	180 0 0 0 0 0	0 0 0 0 178	0 358			Base	0 0 0 352 580	0 0 0	0 0 0 0		
Total	-0 0 0 0 0 0	0 0 0 0 0	0 -0			Added	0 0 0 0 -0	0 0 0	0 0 0 0		
#160											
Base	0 0 0 0 0 0	0 -178 -180	0 -358			#207	0 -714 0 0 0	0 0 0	0 0 -396		
Added	0 0 0 0 0 0	0 178 180	0 358			Base	0 714 0 0 0	0 0 0	0 0 396		
Total	0 0 0 0 0 0	0 0 0 -0	0 -0			Added	0 -0 0 0 0	0 0 0	0 0 0		
#161											
Base	0 0 0 0 -178 0	0 0 -286	0 0 -464			#214	0 0 0 0 0	0 0 0	0 -546 -564		
Added	0 0 0 0 178 0	0 0 286	0 0 464			Base	0 0 0 0 0	0 0 0	0 546 564		
Total	0 0 0 0 0 -0	0 0 -0	0 -0			Added	0 0 0 0 0	0 0 0	0 546 564		

Table J.7-1 (Continued)

NOBLD-AM, CMD		Tue Nov 5, 1996 13:08:31		NOBLD-AM, CMD		Tue Nov 5, 1996 13:08:31		Page 3-4		Page 4-1	
		FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		No Project Alternative					
		AM Peak Hour		AM Peak Hour		AM Peak Hour					
Volume		Northbound		Southbound		Eastbound		Westbound		Total	
Type		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#217											
Base	0	0	0	0	0	-45	0	0	0	0	-70
Added	0	0	0	0	0	45	0	0	0	0	70
Total	0	0	0	0	0	0	0	0	0	0	0
#218											
Base	0	-21	0	0	0	0	0	0	0	0	-46
Added	0	21	0	0	0	0	0	0	0	0	47
Total	0	0	0	0	0	0	0	0	0	0	1
#219											
Base	0	-43	0	0	0	0	0	0	0	0	-63
Added	0	43	0	0	0	0	0	0	0	0	63
Total	0	0	0	0	0	0	0	0	0	0	0
#220											
Base	0	0	0	0	0	-45	-34	0	0	0	-99
Added	0	0	0	0	0	45	34	0	0	0	100
Total	0	0	0	0	0	0	0	0	0	0	1
#225											
Base	0	0	0	0	0	0	0	0	-396	-20	-416
Added	0	0	0	0	0	0	0	0	396	20	416
Total	0	0	0	0	0	0	0	0	0	0	0
#226											
Base	0	0	0	0	0	0	0	0	0	0	-356
Added	0	0	0	0	0	0	0	0	0	0	356
Total	0	0	0	0	0	0	0	0	0	0	0
#244											
Base	0	0	0	0	0	-288	-312	-47	0	-45	-692
Added	0	0	0	0	0	288	312	47	0	45	692
Total	0	0	0	0	0	0	0	0	0	0	0

Volume		NB Link		SB Link		EB Link		WB Link		Total	
Type		In	Out	In	Out	In	Out	In	Out	In	Out
#3 Maritime/Burma											
Base	83	292	375	287	78	365	5	5	10	0	0
Added	262	338	600	551	406	956	144	212	356	0	0
Total	345	630	975	838	484	1321	149	217	366	0	0
#4 Maritime/14th											
Base	130	283	413	364	178	542	0	0	0	109	142
Added	466	492	958	338	262	600	405	456	861	0	0
Total	596	775	1371	702	440	1142	405	456	861	109	142
#5 Maritime/7th Ext.											
Base	159	37	196	334	69	403	106	493	599	0	0
Added	491	493	983	492	466	958	5	29	34	0	0
Total	650	530	1179	826	535	1361	111	522	633	0	0
#6 7th/7th Ext.											
Base	15	26	41	0	54	54	0	15	15	80	80
Added	198	223	421	493	491	983	479	580	1059	847	723
Total	213	249	462	493	545	1037	479	595	1074	927	723
#7 Middle Harbor/Gate 2											
Base	98	247	345	0	0	0	39	391	430	546	45
Added	30	167	197	0	0	0	217	219	436	374	235
Total	128	414	542	0	0	0	256	610	866	920	280
#8 Adeline St./ 3rd St.											
Base	39	79	118	52	64	116	43	93	136	165	63
Added	707	950	1657	950	707	1657	0	0	0	0	0
Total	746	1029	1775	1002	771	1773	43	93	136	165	63
#12 Maritime/W.Grand/I-880 Ramps											
Base	33	466	499	91	90	181	880	347	1227	309	410
Added	406	551	956	0	0	0	403	271	674	147	134
Total	439	1017	1455	91	90	181	1283	618	1901	456	544
#13 Adeline/5th/I-880 SB Ramps											
Base	0	109	109	346	620	966	307	334	641	533	123
Added	707	950	1657	177	117	295	227	153	380	546	437
Total	707	1059	1766	523	737	1261	534	487	1021	1079	560
#14 Union/5th/I-880 NB Ramps											
Base	220	372	592	185	314	499	80	62	142	351	88
Added	227	153	380	0	0	0	0	0	0	153	227
Total	447	525	972	185	314	499	80	62	142	504	315

Table J.7-1 (Continued)

NOBLD-AM.CMD Tue Nov 5, 1996 13:08:31 Page 4-2 NOBLD-AM.CMD Tue Nov 5, 1996 13:08:31 Page 4-3

FISCO/Port Vision 2000 EIS/EIR
No Project Alternative
AM Peak Hour

Volume		NB Link		SB Link		EB Link		WB Link		Total		
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total

#15 7th/I-880 NB Ramp/Frontage Rd.												
Base	569	0	569	111	549	660	16	156	172	63	54	117
Added	564	0	564	275	227	502	229	847	1076	8	2	10
Total	1133	0	1133	386	776	1162	245	1003	1248	71	56	127
#16 7th/I-880 SB Ramp												
Base	0	65	65	0	0	0	0	0	0	65	0	65
Added	0	495	495	0	0	0	723	847	1571	847	229	1076
Total	0	560	560	0	0	0	723	847	1571	912	229	1141
#17 14th/I-880 Frontage Rd.												
Base	89	140	229	30	6	36	0	0	0	146	119	265
Added	227	275	502	275	227	502	0	0	0	0	0	0
Total	316	415	731	305	233	538	0	0	0	146	119	265
#18 W. Grand/I-880 Frontage Rd.												
Base	9	60	69	732	514	1246	311	167	478	601	912	1513
Added	227	275	502	185	151	336	134	147	282	237	210	448
Total	236	335	571	917	665	1582	445	314	760	838	1122	1961
#138												
Base	-156	-173	-329	-199	-180	-379	-24	-26	-50	0	0	0
Added	156	173	329	199	180	379	24	26	50	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
#158												
Base	-309	0	-309	0	-180	-180	0	0	0	0	-129	-129
Added	309	0	309	0	180	180	0	0	0	0	129	129
Total	0	0	0	0	0	0	0	0	0	0	0	0
#159												
Base	-180	0	-180	0	0	0	0	-358	-358	-178	0	-178
Added	180	0	180	0	0	0	0	358	358	178	0	178
Total	0	0	0	0	0	0	0	0	0	0	0	0
#160												
Base	0	-178	-178	0	0	0	0	-180	-180	-358	0	-358
Added	0	178	178	0	0	0	0	180	180	358	0	358
Total	0	0	0	0	0	0	0	0	0	0	0	0
#161												
Base	0	-464	-464	-178	0	-178	-286	0	-286	0	0	0
Added	0	464	464	178	0	178	286	0	286	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0

Volume		NB Link		SB Link		EB Link		WB Link		Total		
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total

#165												
Base	0	-722	-722	-227	0	-227	-495	0	-495	0	0	0
Added	0	722	722	227	0	227	495	0	495	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
#170												
Base	-717	0	-717	0	-153	-153	0	0	0	0	-564	-564
Added	717	0	717	0	153	153	0	0	0	0	564	564
Total	0	0	0	0	0	0	0	0	0	0	0	0
#177												
Base	0	-351	-351	0	-351	-129	0	-129	0	-129	-129	-129
Added	0	351	351	0	351	129	0	129	0	129	129	129
Total	0	0	0	0	0	0	0	0	0	0	0	0
#178												
Base	-266	0	-266	0	-370	-370	-129	0	-129	0	-25	-25
Added	266	0	266	0	370	370	129	0	129	0	25	25
Total	0	0	0	0	0	0	0	0	0	0	0	0
#182												
Base	-370	0	-370	-475	-370	-845	0	-475	-475	0	0	0
Added	370	0	370	475	370	845	0	475	475	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
#201												
Base	0	0	0	0	0	0	0	-932	0	-932	-932	-1864
Added	0	0	0	0	0	0	0	932	0	932	932	1864
Total	0	0	0	0	0	0	0	0	0	0	0	0
#204												
Base	0	-580	-580	-932	0	-932	0	0	0	0	-352	-352
Added	0	580	580	932	0	932	0	0	0	0	352	352
Total	0	0	0	0	0	0	0	0	0	0	0	0
#207												
Base	-714	0	-714	0	-1110	-1110	0	0	0	-396	0	-396
Added	714	0	714	0	1110	1110	0	0	0	396	0	396
Total	0	0	0	0	0	0	0	0	0	0	0	0
#214												
Base	0	-546	-546	0	0	0	0	0	0	-564	-1110	-1110
Added	0	546	546	0	0	0	0	0	0	564	1110	1110
Total	0	0	0	0	0	0	0	0	0	0	0	0

Table J.7-1 (Continued)

NOBLD-AM.CMD		Tue Nov 5, 1996 13:08:31		Page 8-1	
NOBLD-AM.CMD		Tue Nov 5, 1996 13:08:31		Page 9-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR	
No Project Alternative		No Project Alternative		No Project Alternative	
AM Peak Hour		AM Peak Hour		AM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #5 Maritime/7th Ext.		Intersection #6 7th/7th Ext.		Intersection #7 7th/7th Ext.	
Cycle (sec): 100		Cycle (sec): 100		Cycle (sec): 100	
Loss Time (sec): 8 (Y+R = 4 sec)		Loss Time (sec): 8 (Y+R = 4 sec)		Loss Time (sec): 8 (Y+R = 4 sec)	
Optimal Cycle: 48		Optimal Cycle: 58		Optimal Cycle: 58	
Level Of Service: B		Level Of Service: C		Level Of Service: C	
Approach: North Bound South Bound East Bound West Bound		Approach: North Bound South Bound East Bound West Bound		Approach: North Bound South Bound East Bound West Bound	
Movement: L - T - R L - T - R L - T - R L - T - R		Movement: L - T - R L - T - R L - T - R L - T - R		Movement: L - T - R L - T - R L - T - R	
Control: Protected Protected Protected Protected Protected Protected		Control: Protected Protected Protected Protected Protected Protected		Control: Protected Protected Protected Protected Protected Protected	
Rights: Include Include Include Include Include Include		Rights: Include Include Include Include Include Include		Rights: Include Include Include Include Include Include	
Min. Green: 10 20 20 0 20 20 10 0 20 0 0 0		Min. Green: 10 20 20 0 20 20 10 0 20 0 0 0		Min. Green: 10 20 20 0 20 20 10 0 20 0 0 0	
Lanes: 1 0 1 1 0 0 0 1 1 0 1 0 0 0 0 0		Lanes: 1 0 1 1 0 0 0 1 1 0 1 0 1 0 2 0 1		Lanes: 1 0 1 1 0 0 0 1 1 0 1 0 1 0 2 0 1	
Volume Module:		Volume Module:		Volume Module:	
Base Vol: 159 0 0 0 334 69 0 37 0 0 0		Base Vol: 15 0 0 0 0 0 0 0 0 0 0 0		Base Vol: 15 0 0 0 0 0 0 0 0 0 0 0	
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse: 159 0 0 0 334 69 0 37 0 0 0		Initial Bse: 15 0 0 0 0 0 0 0 0 0 0 0		Initial Bse: 15 0 0 0 0 0 0 0 0 0 0 0	
Added Vol: 25 466 0 0 0 488 4 1 0 5 0 0 0		Added Vol: 23 118 57 267 137 88 55 399 25 61 469 318		Added Vol: 23 118 57 267 137 88 55 399 25 61 469 318	
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0		PasserByVol: 0 0 0 0 0 0 0 0 0 0 0		PasserByVol: 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut: 184 466 0 0 488 338 70 0 42 0 0 0		Initial Fut: 38 118 57 267 137 88 55 399 25 87 469 372		Initial Fut: 38 118 57 267 137 88 55 399 25 87 469 372	
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume: 184 466 0 0 488 338 70 0 42 0 0 0		PHF Volume: 38 118 57 267 137 88 55 399 25 87 469 372		PHF Volume: 38 118 57 267 137 88 55 399 25 87 469 372	
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0		Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0		Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol: 184 466 0 0 488 338 70 0 42 0 0 0		Reduced Vol: 38 118 57 267 137 88 55 399 25 87 469 372		Reduced Vol: 38 118 57 267 137 88 55 399 25 87 469 372	
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj: 1.00 1.05 1.05 1.00 1.05 1.05 1.00 1.00 1.00 1.00 1.00		MLF Adj: 1.00 1.05 1.05 1.00 1.05 1.05 1.00 1.00 1.00 1.00 1.00		MLF Adj: 1.00 1.05 1.05 1.00 1.05 1.05 1.00 1.00 1.00 1.00 1.00	
Final Vol: 184 489 0 0 513 355 70 0 42 0 0 0		Final Vol: 38 124 60 267 144 93 55 439 27 87 492 372		Final Vol: 38 124 60 267 144 93 55 439 27 87 492 372	
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900		Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900		Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment: 0.95 1.00 1.00 1.00 0.94 0.94 0.95 1.00 0.85 1.00 1.00		Adjustment: 0.95 0.95 0.95 0.95 0.94 0.94 0.95 0.99 0.99 0.95 1.00		Adjustment: 0.95 0.95 0.95 0.95 0.94 0.94 0.95 0.99 0.99 0.95 1.00	
Lanes: 1.00 2.00 0.00 0.00 1.18 0.82 1.00 0.00 1.00 0.00 0.00		Lanes: 1.00 1.35 0.65 1.00 1.22 0.78 1.00 2.83 0.17 1.00 2.00		Lanes: 1.00 1.35 0.65 1.00 1.22 0.78 1.00 2.83 0.17 1.00 2.00	
Final Sat.: 1805 3800 0 0 2111 1461 1805 0 1615 0 0		Final Sat.: 1805 2433 1177 1805 2170 1402 1805 5316 327 1805 3800		Final Sat.: 1805 2433 1177 1805 2170 1402 1805 5316 327 1805 3800	
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat: 0.10 0.13 0.00 0.00 0.24 0.24 0.04 0.00 0.03 0.00 0.00		Vol/Sat: 0.02 0.05 0.05 0.15 0.07 0.07 0.03 0.08 0.08 0.05 0.13		Vol/Sat: 0.02 0.05 0.05 0.15 0.07 0.07 0.03 0.08 0.08 0.05 0.13	
Crit Moves: ****		Crit Moves: ****		Crit Moves: ****	
Green/Cycle: 0.24 0.82 0.00 0.00 0.58 0.68 0.10 0.00 0.34 0.00 0.00		Green/Cycle: 0.18 0.20 0.20 0.33 0.35 0.35 0.10 0.20 0.20 0.19 0.29		Green/Cycle: 0.18 0.20 0.20 0.33 0.35 0.35 0.10 0.20 0.20 0.19 0.29	
Volume/Cap: 0.42 0.16 0.00 0.00 0.42 0.36 0.39 0.00 0.08 0.00 0.00		Volume/Cap: 0.12 0.25 0.25 0.45 0.19 0.19 0.30 0.41 0.41 0.25 0.45		Volume/Cap: 0.12 0.25 0.25 0.45 0.19 0.19 0.30 0.41 0.41 0.25 0.45	
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh: 21.0 1.2 0.0 0.0 7.7 4.5 27.9 0.0 14.3 0.0 0.0		Delay/Veh: 22.4 21.8 21.8 17.4 14.5 14.5 27.3 22.7 22.7 22.4 18.9		Delay/Veh: 22.4 21.8 21.8 17.4 14.5 14.5 27.3 22.7 22.7 22.4 18.9	
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh: 21.0 1.2 0.0 0.0 7.7 4.5 27.9 0.0 14.3 0.0 0.0		AdjDel/Veh: 22.4 21.8 21.8 17.4 14.5 14.5 27.3 22.7 22.7 22.4 18.9		AdjDel/Veh: 22.4 21.8 21.8 17.4 14.5 14.5 27.3 22.7 22.7 22.4 18.9	
Queue: 4 3 0 0 8 4 2 0 1 0 0		Queue: 1 3 1 6 3 2 1 11 1 2 11		Queue: 1 3 1 6 3 2 1 11 1 2 11	

Table J.7-1 (Continued)

NOBLD-AM.CMD	Tue Nov 5, 1996 13:08:31	Page 10-1	NOBLD-AM.CMD	Tue Nov 5, 1996 13:08:31	Page 11-1												
FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour			FISCO/Port Vision 2000 EIS/EIR No Project Alternative AM Peak Hour														
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)														
Intersection #7 Middle Harbor/Gate 2			Intersection #8 Adeline St./ 3rd St.														
Cycle (sec):	100	Critical Vol./Cap. (X):	0.619	Cycle (sec):	100	Critical Vol./Cap. (X):	0.615										
Loss Time (sec):	0 (Y+R = .4 sec)	Average Delay (sec/veh):	14.4	Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	46.9										
Optimal Cycle:	60	Level Of Service:	B	Optimal Cycle:	92	Level Of Service:	E										
Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound								
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R								
Control:	Protected	Protected	Protected	Protected	Control:	Split Phase	Split Phase	Split Phase	Split Phase								
Rights:	Include	Include	Include	Include	Rights:	Include	Include	Include	Include								
Min. Green:	10	0	20	0	0	20	10	20	20	10	20	20					
Lanes:	1	0	0	1	0	0	0	1	0	1	0	1	0				
Volume Module:				Volume Module:													
Base Vol:	53	0	45	0	0	0	0	31	26	0	26	8	6	29	50	59	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	0	45	0	0	0	0	31	26	0	26	8	6	29	50	59	56
Added Vol:	2	0	28	0	0	0	0	207	10	157	217	0	0	0	0	0	0
PasserByVol:	176	0	264	0	0	0	0	117	176	0	0	0	0	0	0	0	0
Initial Fut:	231	0	337	0	0	0	0	207	166	541	555	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	231	0	337	0	0	0	0	207	166	541	555	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	231	0	337	0	0	0	0	207	166	541	555	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol:	231	0	337	0	0	0	0	218	174	541	583	0	0	0	0	0	0
Saturation Flow Module:				Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	1.00	1.00	0.93	0.93	0.95	1.00	1.00	1.00	0.97	0.97	0.85	0.94	0.94	0.94
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	1.11	0.89	1.00	2.00	0.00	0.05	1.90	0.05	0.57	0.43	1.00
Final Sat:	1805	0	1615	0	0	0	0	1965	1569	1805	3800	98	3605	98	1053	790	1615
Capacity Analysis Module:				Capacity Analysis Module:													
Vol/Sat:	0.13	0.00	0.21	0.00	0.00	0.00	0.11	0.11	0.30	0.15	0.00	0.28	0.28	0.01	0.01	0.02	0.05
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Green/Cycle:	0.33	0.00	0.33	0.00	0.00	0.00	0.00	0.20	0.20	0.47	0.67	0.27	0.27	0.20	0.20	0.20	0.20
Volume/Cap:	0.39	0.00	0.64	0.00	0.00	0.00	0.00	0.55	0.55	0.64	0.23	1.01	1.01	0.04	0.04	0.09	0.24
Level Of Service Module:				Level Of Service Module:													
Delay/Veh:	16.9	0.0	20.2	0.0	0.0	0.0	0.0	24.0	24.0	14.0	4.1	47.5	47.5	20.8	20.8	21.1	21.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.9	0.0	20.2	0.0	0.0	0.0	0.0	24.0	24.0	14.0	4.1	47.5	47.5	20.8	20.8	21.1	21.8
Queue:	5	0	8	0	0	0	0	6	5	12	6	2	2	0	0	1	1

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Table J.7-1 (Continued)

NOBLD-AM, CMD		Tue Nov 5, 1996 13:08:31		Page 12-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 13-1	
No Project Alternative		No Project Alternative		AM Peak Hour	
Level of Service Computation Report		Level of Service Computation Report		Level of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #12 Maritime/W. Grand/I-880 Ramps		Intersection #12 Maritime/W. Grand/I-880 Ramps		Intersection #13 Adeline/5th/I-880 SB Ramps	
Cycle (sec):	100	Cycle (sec):	100	Cycle (sec):	100
Loss Time (sec):	10 (Y+R = 4 sec)	Loss Time (sec):	10 (Y+R = 4 sec)	Loss Time (sec):	12 (Y+R = 4 sec)
Optimal Cycle:	70	Optimal Cycle:	70	Optimal Cycle:	82
Level of Service:	C	Level of Service:	C	Level of Service:	C
Approach:	North Bound	Approach:	North Bound	Approach:	North Bound
Movement:	L - T - R	Movement:	L - T - R	Movement:	L - T - R
Control:	Protected	Control:	Protected	Control:	Protected
Rights:	Include	Rights:	Include	Rights:	Include
Min. Green:	10 20 20	Min. Green:	10 20 20	Min. Green:	10 20 20
Lanes:	2 0 0 1 0	Lanes:	2 0 0 1 0	Lanes:	1 0 1 1 0
Volume Module:		Volume Module:		Volume Module:	
Base Vol:	0 33 0 16 28 47	Base Vol:	0 33 0 16 28 47	Base Vol:	0 0 0 72 109 165
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:	0 33 0 16 28 47	Initial Bse:	0 33 0 16 28 47	Initial Bse:	0 0 0 72 109 165
Added Vol:	271 0 134 0 0 0	Added Vol:	271 0 134 0 0 0	Added Vol:	153 117 437 0 177 0
PasserByVol:	0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0
Initial Fut:	271 33 134 16 28 47	Initial Fut:	271 33 134 16 28 47	Initial Fut:	153 117 437 72 286 165
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:	271 33 134 16 28 47	PHF Volume:	271 33 134 16 28 47	PHF Volume:	153 117 437 72 286 165
Reduced Vol:	0 0 0 0 0 0	Reduced Vol:	0 0 0 0 0 0	Reduced Vol:	0 0 0 0 0 0
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:	1.03 1.00 1.00 1.00 1.00 1.00	MLF Adj:	1.03 1.00 1.00 1.00 1.00 1.00	MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00
Final Vol:	279 33 134 16 28 47	Final Vol:	279 33 134 16 28 47	Final Vol:	153 117 437 72 301 173
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:	1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900
Adjustment:	0.95 0.88 0.88 0.95 0.91 0.91	Adjustment:	0.95 0.88 0.88 0.95 0.91 0.91	Adjustment:	0.95 0.85 0.85 0.95 0.95 0.95
Lanes:	2.00 0.20 0.80 1.00 0.37 0.63	Lanes:	2.00 0.20 0.80 1.00 0.37 0.63	Lanes:	1.00 1.00 1.00 1.00 1.00 1.00
Final Sat:	3610 330 1342 1805 645 1084	Final Sat:	3610 330 1342 1805 645 1084	Final Sat:	1805 1900 1615 1805 2292 1318
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:	0.08 0.10 0.10 0.01 0.04 0.04	Vol/Sat:	0.08 0.10 0.10 0.01 0.04 0.04	Vol/Sat:	0.08 0.06 0.27 0.04 0.13 0.13
Crit Moves:	****	Crit Moves:	****	Crit Moves:	****
Green/Cycle:	0.13 0.22 0.22 0.11 0.20 0.20	Green/Cycle:	0.13 0.22 0.22 0.11 0.20 0.20	Green/Cycle:	0.11 0.21 0.58 0.10 0.20 0.20
Volume/Cap:	0.62 0.46 0.46 0.08 0.22 0.22	Volume/Cap:	0.62 0.46 0.46 0.08 0.22 0.22	Volume/Cap:	0.81 0.30 0.47 0.40 0.66 0.66
Level of Service Module:		Level of Service Module:		Level of Service Module:	
Delay/Veh:	28.6 22.7 22.7 25.9 21.7 21.7	Delay/Veh:	28.6 22.7 22.7 25.9 21.7 21.7	Delay/Veh:	43.1 21.8 8.0 28.0 25.3 25.3
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:	28.6 22.7 22.7 25.9 21.7 21.7	AdjDel/Veh:	28.6 22.7 22.7 25.9 21.7 21.7	AdjDel/Veh:	43.1 21.8 8.0 28.0 25.3 25.3
Queue:	8 1 3 0 1 1	Queue:	8 1 3 0 1 1	Queue:	5 3 7 2 8 5

Table J.7-1 (Continued)

NOBLD-AM, CMD Tue Nov 5, 1996 13:08:31 Page 14-1
 FISCO/Port Vision 2000 EIS/EIR
 No Project Alternative
 AM Peak Hour

Level Of Service Computation Report
 1994 HCM Operations Method (Future Volume Alternative)
 Intersection #14 Union/5th/I-880 NB Ramps
 Cycle (sec): 100 Critical Vol./Cap. (X): 0.151
 Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): 17.3
 Optimal Cycle: 71 Level Of Service: C
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R
 Control: Protected Protected Include Split Phase Split Phase
 Rights: Include Include Include Include
 Min. Green: 0 20 20 0 20 20 10 20 20 10 20 20
 Lanes: 0 0 1 1 0 0 0 1 0 0 1 0 1 0 1 0
 Volume Module:
 Base Vol: 0 175 45 0 154 31 24 43 13 205 31 115
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Initial Bse: 0 175 45 0 154 31 24 43 13 205 31 115
 Added Vol: 0 0 227 0 0 0 0 0 0 0 153 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 175 272 0 154 31 24 43 13 358 31 115
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 0 175 272 0 154 31 24 43 13 358 31 115
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 175 272 0 154 31 24 43 13 358 31 115
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.10 1.10 1.00 1.05 1.05 1.05 1.05 1.05 1.00 1.00 1.00
 Final Vol: 0 193 299 0 162 33 25 45 14 358 31 115
 Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 1.00 0.91 0.91 1.00 0.97 0.97 0.96 0.96 0.96 0.95 1.00 0.85
 Lanes: 0.00 1.18 1.82 0.00 1.66 0.34 0.60 1.07 0.33 1.00 1.00 1.00
 Final Sat: 0 2035 3152 0 3062 624 1086 1955 608 1805 1900 1615
 Capacity Analysis Module:
 Vol/Sat: 0.00 0.09 0.09 0.00 0.05 0.05 0.02 0.02 0.02 0.20 0.02 0.07
 Crit Moves: ****
 Green/Cycle: 0.00 0.22 0.22 0.00 0.22 0.22 0.20 0.20 0.20 0.47 0.47 0.47
 Volume/Cap: 0.00 0.42 0.42 0.00 0.24 0.24 0.12 0.12 0.12 0.42 0.03 0.15
 Level Of Service Module:
 Delay/Veh: 0.0 21.7 21.7 0.0 20.6 20.6 21.2 21.2 21.2 11.7 9.3 9.9
 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 AdjDel/Veh: 0.0 21.7 21.7 0.0 20.6 20.6 21.2 21.2 21.2 11.7 9.3 9.9
 Queue: 0 5 7 0 4 1 1 0 7 0 2 2

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J.7-11

NOBLD-AM, CMD Tue Nov 5, 1996 13:08:31 Page 15-1
 FISCO/Port Vision 2000 EIS/EIR
 No Project Alternative
 AM Peak Hour

Level Of Service Computation Report
 1994 HCM Operations Method (Future Volume Alternative)
 Intersection #15 7th/I-880 NB Ramp/Frontage Rd.
 Cycle (sec): 100 Critical Vol./Cap. (X): 0.509
 Loss Time (sec): 10 (Y+R = 4 sec) Average Delay (sec/veh): 23.3
 Optimal Cycle: 70 Level Of Service: C
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R
 Control: Protected Protected Protected Protected
 Rights: Include Include Include Include
 Min. Green: 10 20 20 10 20 20 10 20 20 0 20 20
 Lanes: 1 0 1 1 0 1 0 0 2 1 0 2 0 0 0 1 1 0
 Volume Module:
 Base Vol: 0 548 21 17 0 94 0 16 0 0 62 1
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Initial Bse: 0 548 21 17 0 94 0 16 0 0 62 1
 Added Vol: 564 0 0 0 0 275 227 2 0 0 8 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 564 548 21 17 0 369 227 18 0 0 70 1
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 564 548 21 17 0 369 227 18 0 0 70 1
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 564 548 21 17 0 369 227 18 0 0 70 1
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.05 1.05 1.00 1.00 1.13 1.00 1.05 1.00 1.00 1.05 1.05
 Final Vol: 564 575 22 17 0 417 227 18 0 0 74 1
 Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 0.95 0.99 0.99 0.95 1.00 0.85 0.95 1.00 1.00 1.00 1.00
 Lanes: 1.00 1.93 0.07 1.00 0.00 2.00 1.00 2.00 0.00 0.00 1.97 0.03
 Final Sat: 1805 3623 139 1805 0 3230 1805 3800 0 0 3749 51
 Capacity Analysis Module:
 Vol/Sat: 0.31 0.16 0.16 0.01 0.00 0.13 0.13 0.00 0.00 0.00 0.02 0.02
 Crit Moves: ****
 Green/Cycle: 0.36 0.37 0.37 0.19 0.00 0.34 0.14 0.34 0.00 0.00 0.20 0.20
 Volume/Cap: 0.88 0.43 0.43 0.05 0.00 0.38 0.88 0.01 0.00 0.00 0.10 0.10
 Level Of Service Module:
 Delay/Veh: 28.6 15.3 15.3 21.6 0.0 16.1 45.7 14.0 0.0 0.0 21.1 21.1
 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 AdjDel/Veh: 28.6 15.3 15.3 21.6 0.0 16.1 45.7 14.0 0.0 0.0 21.1 21.1
 Queue: 17 12 1 0 0 9 8 0 0 0 2 0

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Table J.7-1 (Continued)

[illegible]

Table J.7-1 (Continued)

Page 18-1

Tue Nov 5, 1996 13:08:31

NOBLD-AM.CMD

FISCO/Port Vision 2000 EIS/EIR

No Project Alternative

AM Peak Hour

Level Of Service Computation Report

1994 HCM Operations Method (Future Volume Alternative)

Intersection #18 W.Grand/I-880 Frontage Rd.

Cycle (sec): 100 Critical Vol./Cap. (X): 0.434

Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): 20.6

Optimal Cycle: 81 Level Of Service: C

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Split Phase Split Phase Protected Protected Protected Protected

Rights: Include Include Include Include Include Include

Min. Green: 10 20 20 10 20 20 10 20 20 10 20 20

Lanes: 1 0 1 1 0 1 1 0 1 0 1 0 1 0 1 1 1

Volume Module:

Base Vol: 9 0 0 678 48 6 65 234 12 0 152 449

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 9 0 0 678 48 6 65 234 12 0 152 449

Added Vol: 0 151 76 0 185 0 0 134 0 90 147 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 9 151 76 678 233 6 65 368 12 90 299 449

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 9 151 76 678 233 6 65 368 12 90 299 449

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 9 151 76 678 233 6 65 368 12 90 299 449

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.05 1.05 1.05 1.00 1.00 1.00 1.05 1.05 1.00 1.10 1.10

Final Vol.: 9 159 80 712 233 6 65 387 13 90 329 494

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.95 0.95 0.95 0.95 1.00 1.00 0.95 1.00 1.00 0.95 0.91 0.91

Lanes: 1.00 1.33 0.67 2.00 0.97 0.03 1.00 1.94 0.06 1.00 1.20 1.80

Final Sat.: 1805 2402 1208 3610 1852 48 1805 3677 123 1805 2074 3113

Capacity Analysis Module:

Vol/Sat: 0.00 0.07 0.07 0.20 0.13 0.13 0.04 0.11 0.11 0.05 0.16 0.16

Crit Moves: ****

Green/Cycle: 0.20 0.20 0.20 0.33 0.33 0.33 0.10 0.24 0.24 0.12 0.26 0.26

Volume/Cap: 0.02 0.33 0.33 0.60 0.38 0.38 0.36 0.43 0.43 0.41 0.60 0.60

Level Of Service Module:

Delay/Veh: 20.8 22.2 22.2 18.7 16.8 16.8 27.7 21.0 21.0 27.0 21.4 21.4

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 20.8 22.2 22.2 18.7 16.8 16.8 27.7 21.0 21.0 27.0 21.4 21.4

Queue: 0 4 2 17 5 0 2 9 0 2 8 12

NOBLD-PM.CMD										Mon Nov 4, 1996 15:06:42				Page 1-2	
FISCO/Port Vision 2000 EIS/EIR										FISCO/Port Vision 2000 EIS/EIR					
No Project Alternative										No Project Alternative					
PM Peak Hour										PM Peak Hour					
Trip Generation Report															
Forecast for PM Peak Hour															
Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	Total % Of Trips						
1	FISCO 4 & 5	200.00	Employees	0.06	0.21	12	42	54	1.4						
	Zone 1 Subtotal					12	42	54	1.4						
2	FISCO 1,2,3	500.00	Employees	0.06	0.21	30	105	135	3.6						
	Zone 2 Subtotal					30	105	135	3.6						
4	SP Rail Term	130.00	Employees	0.10	0.36	13	47	60	1.6						
	Zone 4 Subtotal					13	47	60	1.6						
5	UP Rail Term	82.00	Employees	0.10	0.36	8	30	38	1.0						
	Zone 5 Subtotal					8	30	38	1.0						
6	Middle Harbr	516.00	Employees	0.06	0.22	31	114	145	3.8						
	Zone 6 Subtotal					31	114	145	3.8						
7	7th St Harbr	613.00	Employees	0.06	0.22	37	135	172	4.6						
	Zone 7 Subtotal					37	135	172	4.6						
8	Outer Harbor	706.00	Employees	0.06	0.21	42	148	190	5.0						
	Zone 8 Subtotal					42	148	190	5.0						
16	Middle Harbr	1.00	Trucks Inter	17.00	20.00	17	20	37	1.0						
	Zone 16 Subtotal					17	20	37	1.0						
17	7th St Harbr	1.00	Trucks Inter	20.00	24.00	20	24	44	1.2						
	Zone 17 Subtotal					20	24	44	1.2						
18	Outer Harbor	1.00	Trucks Inter	23.00	27.00	23	27	50	1.3						
	Zone 18 Subtotal					23	27	50	1.3						
24	SP Rail Term	1.00	Truck External	213.00	255.00	213	255	468	12.4						
	Zone 24 Subtotal					213	255	468	12.4						
25	UP Rail Term	1.00	Truck External	115.00	138.00	115	138	253	6.7						
	Zone 25 Subtotal					115	138	253	6.7						
26	Middle Harbr	1.00	Truck External	273.00	327.00	273	327	600	15.9						
	Zone 26 Subtotal					273	327	600	15.9						
27	7th St Harbr	1.00	Truck External	325.00	388.00	325	388	713	18.9						
	Zone 27 Subtotal					325	388	713	18.9						
28	Outer Harbor	1.00	Truck External	374.00	447.00	374	447	821	21.7						
	Zone 28 Subtotal					374	447	821	21.7						
TOTAL										1533	2247	3780	100.0		

Table J.7-2 (Continued)

NOBLD-PM.CMD		Mon Nov 4, 1996 15:06:42		Page 3-2		NOBLD-PM.CMD		Mon Nov 4, 1996 15:06:42		Page 3-3						
FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour																
						FISCO/Port Vision 2000 EIS/EIR No Project Alternative PM Peak Hour										
Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total					
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume			
#15 7th/I-880 NB Ramp/Frontage Rd.																
Base	0	197	3	2	0	205	0	0	0	-126	0	0	-534	0	0	-660
Added	391	0	0	0	181	258	6	0	0	126	0	0	534	0	0	660
Total	391	197	3	2	0	386	258	114	0	0	-0	0	-0	0	0	-0
#16 7th/I-880 SB Ramp																
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-596
Added	0	0	0	0	0	0	0	264	534	0	0	0	0	0	0	597
Total	0	0	0	0	0	0	0	264	541	378	574	0	0	0	0	1
#17 14th/I-880 Frontage Rd.																
Base	0	62	130	4	0	0	0	0	0	115	0	7	318	0	0	-377
Added	0	258	0	0	181	0	0	0	0	0	0	0	439	0	0	377
Total	0	320	130	4	181	0	0	0	0	115	0	7	757	0	0	0
#18 W.Grand/I-880 Frontage Rd.																
Base	75	72	0	759	0	6	86	277	3	0	456	330	2064	0	0	-486
Added	0	173	85	0	121	0	0	140	0	60	106	0	685	0	0	486
Total	75	245	85	759	121	6	86	417	3	60	562	330	2749	0	0	-0
#138																
Base	0	-168	0	0	-123	-24	-20	0	0	0	0	0	-335	0	0	-736
Added	0	168	0	0	123	24	20	0	0	0	0	0	335	0	0	736
Total	0	0	0	0	0	-0	0	0	0	0	0	0	0	0	0	0
#158																
Base	0	-259	-163	0	0	0	0	0	0	0	0	0	-422	0	0	-104
Added	0	259	163	0	0	0	0	0	0	0	0	0	422	0	0	1043
Total	0	0	-0	0	0	0	0	0	0	0	0	0	0	0	0	-0
#159																
Base	-259	0	0	0	0	0	0	0	0	0	-105	0	-364	0	0	-1043
Added	259	0	0	0	0	0	0	0	0	0	105	0	365	0	0	1043
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	-0
#160																
Base	0	0	0	0	0	0	0	0	0	0	-105	-259	-364	0	0	-741
Added	0	0	0	0	0	0	0	0	0	0	105	259	365	0	0	741
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
#161																
Base	0	0	0	0	-105	0	0	0	0	-150	0	0	-255	0	0	-741
Added	0	0	0	0	105	0	0	0	0	150	0	0	256	0	350	741
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	-0	0

Table J.7-2 (Continued)

NOBLD-PM.CMD		Mon Nov 4, 1996 15:06:42				NOBLD-PM.CMD		Mon Nov 4, 1996 15:06:42				Page 3-4		Page 4-1												
FISCO/Port Vision 2000 EIS/EIR																										
No Project Alternative																										
PM Peak Hour																										
Link Volume Report																										
PM Peak Hour																										
Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	NB Link	SB Link	EB Link	WB Link	Total	Volume	SB Link	EB Link												
Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Total	Type	In Out Total	In Out Total	In Out Total	In Out Total	Total	Type	In Out Total	In Out Total												
#217						#3 Maritime/Burma						#4 Maritime/14th														
Base	0	0	0	0	0	Base	595 159 754	109 590 699	50 5 55	0 0 0	0	Base	442 224 666	237 704 941												
Added	0	0	0	0	0	Added	315 211 526	329 506 836	192 119 310	0 0 0	0	Added	416 422 839	211 315 526												
Total	0	0	0	0	0	Total	910 370 1280	438 1096 1535	242 124 365	0 0 0	0	Total	858 646 1505	448 1019 1467												
#218						#5 Maritime/7th Ext.						#6 7th/7th Ext.														
Base	0	0	0	0	0	Base	36 74 110	75 223 298	297 111 408	0 0 0	0	Base	324 225 549	0 0 0												
Added	0	0	0	0	0	Added	419 440 859	422 416 839	22 6 28	0 0 0	0	Added	125 36 161	0 0 0												
Total	0	0	0	0	0	Total	455 514 969	497 639 1137	319 117 436	0 0 0	0	Total	449 261 710	0 0 0												
#219						#7 Middle Harbor/Gate 2						#8 Adeline St./ 3rd St.														
Base	0	0	0	0	0	Base	204 166 370	440 419 859	547 382 929	574 798 1372	3531	Base	158 102 260	58 108 166												
Added	0	0	0	0	0	Added	204 203 407	489 419 908	566 382 948	574 829 1403	3667	Added	874 572 1446	572 874 1446												
Total	0	0	0	0	0	Total	204 203 407	489 419 908	566 382 948	574 829 1403	3667	Total	1032 674 1706	630 982 1612												
#220						#12 Maritime/W.Grand/I-880 Ramps						#13 Adeline/5th/I-880 SB Ramps														
Base	0	0	0	0	0	Base	23 233 256	55 56 111	684 647 1331	637 463 1100	2798	Base	23 233 256	55 56 111												
Added	0	0	0	0	0	Added	506 329 836	0 0 0	224 366 590	106 140 246	1672	Added	506 329 836	0 0 0												
Total	0	0	0	0	0	Total	529 562 1092	55 56 111	908 1013 1921	743 603 1346	4470	Total	529 562 1092	55 56 111												
#225						#14 Union/5th/I-880 NB Ramps						#14 Union/5th/I-880 NB Ramps														
Base	0	0	0	0	0	Base	475 194 669	174 259 433	146 61 207	97 378 475	1784	Base	475 194 669	174 259 433												
Added	0	0	0	0	0	Added	126 205 331	0 0 0	0 0 0	205 126 331	662	Added	126 205 331	0 0 0												
Total	0	0	0	0	0	Total	601 399 1000	174 259 433	146 61 207	302 504 806	2446	Total	601 399 1000	174 259 433												

Table J.7-2 (Continued)

NOBLD-PM.CMD				Mon Nov 4, 1996 15:06:42				NOBLD-PM.CMD				Mon Nov 4, 1996 15:06:42				Page 4-3			
				Page 4-2															
				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR							
				No Project Alternative				No Project Alternative				No Project Alternative							
				PM Peak Hour				PM Peak Hour				PM Peak Hour							
Volume	NB Link	SB Link	EB Link	WB Link	Total	Volume	NB Link	SB Link	EB Link	WB Link	Total	Volume	NB Link	SB Link	EB Link	WB Link	Total	Volume	Total
Type	In	Out	Total	In	Out	Type	In	Out	Total	In	Out	Type	In	Out	Total	In	Out	Type	Total
#15 7th/I-880 NB Ramp/Frontage Rd.																			
Base	200	0	200	207	198	405	108	258	366	54	113	167	1138						
Added	391	0	391	181	258	439	264	574	838	2	6	8	1677						
Total	591	0	591	388	456	844	372	832	1204	56	119	175	2815						
#16 7th/I-880 SB Ramp																			
Base	0	385	385	0	0	0	7	0	7	378	0	378	770						
Added	0	534	534	0	0	0	798	574	1372	574	264	838	2745						
Total	0	919	919	0	0	0	805	574	1379	952	264	1216	3515						
#17 14th/I-880 Frontage Rd.																			
Base	192	115	307	4	69	73	0	0	0	122	134	256	636						
Added	258	181	439	181	258	439	0	0	0	0	0	0	878						
Total	450	296	746	185	327	512	0	0	0	122	134	256	1514						
#18 W.Grand/I-880 Frontage Rd.																			
Base	147	3	150	765	488	1253	366	537	903	786	1036	1822	4128						
Added	258	181	439	121	173	294	140	106	246	166	225	391	1369						
Total	405	184	589	886	661	1547	506	643	1149	952	1261	2213	5497						
#138																			
Base	-168	-123	-291	-147	-188	-335	-20	-24	-44	0	0	0	-670						
Added	168	123	291	147	188	335	20	24	44	0	0	0	670						
Total	0	0	0	-0	0	0	0	-0	0	0	0	0	0						
#158																			
Base	-422	0	-422	0	-259	-259	0	0	0	0	-163	-163	-844						
Added	422	0	422	0	259	259	0	0	0	0	163	163	844						
Total	0	0	0	0	0	0	0	0	0	0	0	-0	0						
#159																			
Base	-259	0	-259	0	0	0	0	-364	-364	-105	0	-105	-728						
Added	259	0	259	0	0	0	0	365	365	105	0	105	729						
Total	0	0	0	0	0	0	0	1	1	0	0	0	1						
#160																			
Base	0	-105	-105	0	0	0	0	-259	-259	-364	0	-364	-728						
Added	0	105	105	0	0	0	0	259	259	365	0	365	729						
Total	0	0	0	0	0	0	0	0	0	1	0	0	1						
#161																			
Base	0	-255	-255	-105	0	-105	-150	0	-150	0	0	0	-510						
Added	0	256	256	105	0	105	150	0	150	0	0	0	511						
Total	0	1	1	0	0	0	0	0	0	0	0	0	1						

Table J.7-2 (Continued)

NOBLD-PM.CMD				Mon Nov 4, 1996 15:06:42				NOBLD-PM.CMD				Mon Nov 4, 1996 15:06:42				Page 5-1			
				Page 4-4															
				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR							
				No Project Alternative				No Project Alternative				No Project Alternative							
				PM Peak Hour				PM Peak Hour				PM Peak Hour							
				Impact Analysis Report				Impact Analysis Report				Impact Analysis Report							
				Level Of Service				Level Of Service				Level Of Service							
Volume	NB Link	SB Link	EB Link	WB Link	Total	In	Out	Total	In	Out	Total	Intersection	Base Del/ LOS Veh	Future Del/ LOS Veh	Change in				
Type	In	Out	In	Out	Total	In	Out	Total	In	Out	Total								
#217																			
Base	-19	-19	-19	0	-19	-47	0	-47	0	-47	-47	# 3 Maritime/Burma	B 7.2 0.211	B 9.9 0.305	+ 2.740	D/V			
Added	0	19	19	0	19	47	0	47	0	47	47		C 15.9 0.392	C 19.7 0.728	+ 3.786	D/V			
Total	0	-0	-0	0	-0	0	0	0	0	0	0	# 4 Maritime/14th	B 7.2 0.211	B 9.9 0.305	+ 2.740	D/V			
													C 15.9 0.392	C 19.7 0.728	+ 3.786	D/V			
#218																			
Base	-39	0	-39	0	-70	-47	0	-47	0	-16	-16	# 5 Maritime/7th Ext.	B 6.0 0.156	B 10.6 0.313	+ 4.678	D/V			
Added	39	0	39	0	70	47	0	47	0	16	16		B 6.0 0.156	B 10.6 0.313	+ 4.678	D/V			
Total	-0	-0	-0	-1	-1	0	0	0	0	0	0	# 6 7th/7th Ext.	B 5.8 0.018	C 18.6 0.399	+12.831	D/V			
													B 5.8 0.018	C 18.6 0.399	+12.831	D/V			
#219																			
Base	-70	0	-70	0	-70	0	-5	-5	0	-5	-5	# 7 Middle Harbor/Gate 2	B 13.5 0.296	C 19.4 0.756	+ 5.938	D/V			
Added	70	0	70	0	70	0	5	5	0	5	5		B 13.5 0.296	C 19.4 0.756	+ 5.938	D/V			
Total	-1	0	-1	0	-1	0	-0	-0	0	-0	-2	# 8 Adeline St./ 3rd St.	C 19.2 0.084	D 38.1 0.613	+18.979	D/V			
													C 19.2 0.084	D 38.1 0.613	+18.979	D/V			
#220																			
Base	-19	-19	-37	0	-37	0	-23	-23	-5	0	-5	# 12 Maritime/W.Grand/I-880 Ramps	B 12.4 0.237	C 18.6 0.415	+ 6.228	D/V			
Added	19	19	37	0	37	0	23	23	5	0	5		B 12.4 0.237	C 18.6 0.415	+ 6.228	D/V			
Total	0	-0	-0	0	-0	0	-0	-0	-0	0	-1	# 13 Adeline/5th/I-880 SB Ramps	C 17.5 0.328	C 20.4 0.522	+ 2.917	D/V			
													C 17.5 0.328	C 20.4 0.522	+ 2.917	D/V			
#225																			
Base	0	0	0	-5	-5	0	-278	-278	-283	0	-283	# 14 Union/5th/I-880 NB Ramps	B 12.5 0.178	C 16.3 0.214	+ 3.865	D/V			
Added	0	0	0	5	5	0	278	278	282	0	282		B 12.5 0.178	C 16.3 0.214	+ 3.865	D/V			
Total	0	0	0	-0	-0	0	-0	-0	-1	0	-1	# 15 7th/I-880 NB Ramp/Frontage Rd.	B 11.2 0.079	C 19.2 0.417	+ 7.984	D/V			
													B 11.2 0.079	C 19.2 0.417	+ 7.984	D/V			
#226																			
Base	0	0	-16	0	-16	-375	0	-375	0	-391	-391	# 16 7th/I-880 SB Ramp	A 2.6 0.113	B 6.3 0.466	+ 3.742	D/V			
Added	0	0	16	0	16	375	0	375	0	391	391		A 2.6 0.113	B 6.3 0.466	+ 3.742	D/V			
Total	0	0	0	0	0	-0	-0	-0	-1	0	0	# 17 14th/I-880 Frontage Rd.	A 1.9 0.000	C 1.8 0.000	+ 0.000	V/C			
													A 1.9 0.000	C 1.8 0.000	+ 0.000	V/C			
#244																			
Base	0	0	-302	-226	-528	-270	-339	-609	-37	-44	-81	# 18 W.Grand/I-880 Frontage Rd.	C 21.1 0.505	C 21.6 0.614	+ 0.458	D/V			
Added	0	0	302	226	528	270	339	609	37	44	81		C 21.1 0.505	C 21.6 0.614	+ 0.458	D/V			
Total	0	0	0	0	0	0	0	0	0	0	0		C 21.1 0.505	C 21.6 0.614	+ 0.458	D/V			

Table J.7-2 (Continued)

NOBLD-PM.CMD		Mon Nov 4, 1996 15:06:42		Page 6-1	
FISCO/Port Vision 2000 EIS/EIR		No Project Alternative		PM Peak Hour	
Level Of Service Computation Report					
1994 HCM Operations Method (Future Volume Alternative)					
Intersection #3 Maritime/Burma					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.305		
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	9.9		
Optimal Cycle:	58	Level Of Service:	B		
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Protected	Protected	Protected	Protected	
Rights:	Include	Include	Include	Include	
Min. Green:	10 20 20	10 20 20	10 20 20	0 0 0	0
Lanes:	1 0 1 1 0	1 0 1 1 0	1 0 0 1 0	0 0 0 0 0	0
Volume Module:					
Base Vol:	5 590	0 0 109	0 0 0	50 0 0	0
Growth Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00
Initial Bse:	5 590	0 0 109	0 0 0	50 0 0	0
Added Vol:	0 315	0 0 211	119 192	0 0 0	0
PasserByVol:	0 0	0 0 0	0 0 0	0 0 0	0
Initial Fut:	5 905	0 320	119 192	0 50 0	0
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00
PHF Volume:	5 905	0 320	119 192	0 50 0	0
Reduc Vol:	0 0	0 0 0	0 0 0	0 0 0	0
Reduced Vol:	5 905	0 320	119 192	0 50 0	0
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00
MLF Adj:	1.00 1.05	1.05 1.05	1.00 1.00	1.00 1.00	1.00
Final Vol:	5 950	0 336	125 192	0 50 0	0
Saturation Flow Module:					
Sat/Lane:	1900 1900	1900 1900	1900 1900	1900 1900	1900
Adjustment:	0.95 1.00	1.00 0.96	0.96 0.95	1.00 0.85	1.00 1.00
Lanes:	1.00 2.00	0.00 1.00	1.46 0.54	1.00 0.00	1.00 0.00
Final Sat:	1805 3800	0 1900	2659 989	1805 0	1615 0 0
Capacity Analysis Module:					
Vol/Sat:	0.00 0.25	0.00 0.13	0.13 0.11	0.00 0.03	0.00 0.00
Crit Moves:	0.00 0.62	0.00 0.48	0.48 0.20	0.00 0.20	0.00 0.00
Green/Cycle:	0.24 0.62	0.00 0.48	0.48 0.20	0.00 0.00	0.00 0.00
Volume/Cap:	0.01 0.40	0.00 0.26	0.26 0.53	0.00 0.15	0.00 0.00
Level Of Service Module:					
Delay/Veh:	18.7 6.3	0.0 0.0	10.0 10.0	24.3 0.0	21.4 0.0 0.0
User DelAdj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AdjDel/Veh:	18.7 6.3	0.0 0.0	10.0 10.0	24.3 0.0	21.4 0.0 0.0
Queue:	0 13	0 0	6 2	5 0	1 0 0

NOBLD-PM.CMD		Mon Nov 4, 1996 15:06:42		Page 7-1	
FISCO/Port Vision 2000 EIS/EIR		No Project Alternative		PM Peak Hour	
Level Of Service Computation Report					
1994 HCM Operations Method (Future Volume Alternative)					
Intersection #4 Maritime/14th					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.728		
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	19.7		
Optimal Cycle:	58	Level Of Service:	C		
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Protected	Protected	Protected	Permitted	
Rights:	Include	Include	Ovl	Include	
Min. Green:	10 20 20	10 20 20	10 20 20	10 20 20	20
Lanes:	1 0 1 1 0	1 0 1 1 0	0 0 1 0 0	1 0 0 1 0	0
Volume Module:					
Base Vol:	0 414	28 105 132	0 0 0	0 0 0	290
Growth Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00
Initial Bse:	0 414	28 105 132	0 0 0	0 0 0	290
Added Vol:	229 187	0 0 0	91 128	0 303	0
PasserByVol:	0 0	0 0 0	0 0 0	0 0 0	0
Initial Fut:	229 601	28 105 252	91 128	0 303	290
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00
PHF Volume:	229 601	28 105 252	91 128	0 303	290
Reduc Vol:	0 0	0 0 0	0 0 0	0 0 0	0
Reduced Vol:	229 601	28 105 252	91 128	0 303	290
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00
MLF Adj:	1.00 1.05	1.05 1.05	1.00 1.05	1.00 1.00	1.00
Final Vol:	229 631	29 105 264	96 128	0 303	290
Saturation Flow Module:					
Sat/Lane:	1900 1900	1900 1900	1900 1900	1900 1900	1900
Adjustment:	0.95 0.99	0.99 0.95	0.96 0.96	0.51 1.00	0.51 0.40
Lanes:	1.00 1.91	0.09 1.00	1.47 0.53	0.30 0.00	0.70 1.00
Final Sat:	1805 3597	165 1805 2675	973 288	0 682	760 0
Capacity Analysis Module:					
Vol/Sat:	0.13 0.18	0.18 0.06	0.10 0.10	0.44 0.00	0.44 0.12
Crit Moves:	0.16 0.24	0.24 0.12	0.20 0.20	0.56 0.00	0.72 0.56
Green/Cycle:	0.16 0.24	0.24 0.12	0.20 0.20	0.56 0.00	0.72 0.56
Volume/Cap:	0.79 0.73	0.73 0.48	0.49 0.49	0.79 0.00	0.62 0.22
Level Of Service Module:					
Delay/Veh:	35.7 24.8	24.8 27.9	23.4 23.4	16.7 0.0	5.8 7.2
User DelAdj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AdjDel/Veh:	35.7 24.8	24.8 27.9	23.4 23.4	16.7 0.0	5.8 7.2
Queue:	7 17	1 3	7 2	4 0	5 1

Traffic 6.8.1412 (c) 1995 Dowling Assoc. Licensed to Dowling Assoc., Oakland

J.7-20

Traffic 6.8.1412 (c) 1995 Dowling Assoc. Licensed to Dowling Assoc., Oakland

Table J.7-2 (Continued)

Level Of Service Computation Report													
1994 HCM Operations Method (Future Volume Alternative)													

Intersection #5 Maritme/7th Ext.													

Cycle (sec):	100	Critical Vol./Cap. (X):				0.313							
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):				10.6							
Optimal Cycle:	48	Level Of Service:				B							

Approach:	North Bound	South Bound	East Bound	West Bound	*****								
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Right:	Include	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl
Min. Green:	10	20	20	0	20	20	10	0	20	0	0	0	0
Lanes:	1	0	1	1	0	0	0	1	1	0	1	0	0

Volume Module:													
Base Vol:	36	0	0	0	0	75	223	0	74	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	0	0	0	0	75	223	0	74	0	0	0	0
Added Vol:	5	413	0	0	421	1	3	0	19	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	413	0	0	421	76	226	0	93	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	413	0	0	421	76	226	0	93	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	413	0	0	421	76	226	0	93	0	0	0	0
PCPE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MUF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	41	434	0	0	443	80	226	0	93	0	0	0	0

Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	1.00	0.98	0.98	0.95	1.00	0.85	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.69	0.31	1.00	0.00	1.00	0.00	0.00	0.00	0.00
Final Sat.:	1805	3800	0	0	3154	570	1805	0	1615	0	0	0	0

Capacity Analysis Module:													
Vol/Sat:	0.02	0.11	0.00	0.00	0.14	0.14	0.13	0.00	0.06	0.00	0.00	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.10	0.53	0.00	0.00	0.43	0.82	0.39	0.00	0.49	0.00	0.00	0.00	0.00
Volume/Cap:	0.23	0.21	0.00	0.00	0.32	0.17	0.32	0.00	0.12	0.00	0.00	0.00	0.00

Level Of Service Module:													
Delay/Veh:	26.9	7.9	0.0	0.0	12.1	1.2	14.0	0.0	9.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.9	7.9	0.0	0.0	12.1	1.2	14.0	0.0	9.0	0.0	0.0	0.0	0.0
Queue:	1	6	0	0	8	0	4	0	1	0	0	0	0

Level Of Service Computation Report																	
1994 HCM Operations Method (Future Volume Alternative)																	

Intersection #6 7th/7th Ext.																	

Cycle (sec):	100	Critical Vol./Cap. (X):										0.399					
Loss Time (sec):	8	Y+R = 4 sec										Average Delay (sec/veh):				18.6	
Optimal Cycle:	68	Level Of Service:										C					

Approach:	North Bound	South Bound	East Bound	West Bound	*****												
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R		
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected		
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include		
Min. Green:	10	20	20	10	20	20	10	20	20	10	20	20	0	20	20		
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	1	0		

Volume Module:																	
Base Vol:	0	0	0	31	18	0	0	0	0	0	19	0	0	0	0		
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Initial Bse:	0	0	0	31	18	0	0	0	0	0	19	0	0	0	0		
Added Vol:	19	126	59	296	99	46	80	444	23	45	317	212					
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Initial Fut:	19	126	59	327	117	46	80	444	42	45	317	212					
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PHF Volume:	19	126	59	327	117	46	80	444	42	45	317	212					
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Reduced Vol:	19	126	59	327	117	46	80	444	42	45	317	212					
POPE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PMF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.10	1.10	1.00	1.05	1.00	1.00	1.05	1.00		
Final Vol:	19	132	62	327	122	48	80	488	46	45	333	212					

Saturation Flow Module:																	
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Adjustment:	0.95	0.95	0.96	0.96	0.96	0.95	0.99	0.99	0.99	0.95	1.00	0.85					
Lanes:	1.00	1.36	0.64	1.00	1.44	0.56	1.00	2.74	0.26	1.00	2.00	1.00					
Final Sat:	1805	2456	1154	1805	2618	1030	1805	5157	486	1805	3800	1615					

Capacity Analysis Module:																	
Vol/Sat:	0.01	0.05	0.05	0.18	0.05	0.05	0.04	0.09	0.09	0.02	0.09	0.13					
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	***					
Green/Cycle:	0.21	0.20	0.20	0.42	0.41	0.41	0.10	0.20	0.20	0.10	0.20	0.62					
Volume/Cap:	0.05	0.27	0.27	0.43	0.11	0.11	0.43	0.47	0.47	0.24	0.43	0.21					

Level Of Service Module:																	
Delay/Veh:	20.6	21.9	21.9	13.7	11.8	11.8	28.3	23.1	23.1	26.8	22.8	5.4					
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
DelAdj/Veh:	20.6	21.9	21.9	13.7	11.8	11.8	28.3	23.1	23.1	26.8	22.8	5.4					
Queue:	0	3	1	7	2	1	2	12	1	1	8	3					

Table J.7-2 (Continued)

NOBLD-PM.CMD

Mon Nov 4, 1996 15:06:42

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FISCO/Port Vision 2000 EIS/EIR

No Project Alternative

PM Peak Hour

Level Of Service Computation Report

1994 HCM Operations Method (Future Volume Alternative)

Intersection #7 Middle Harbor/Gate 2

Cycle (sec): 100

Loss Time (sec): 0 (Y+R = 4 sec)

Optimal Cycle: 93

Critical Vol./Cap. (X): 0.756

Average Delay (sec/veh): 19.4

Level Of Service: C

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected

Rights: Include Include Include Include

Min. Green: 10 0 20 0 0 0 0 0 0 20 20 10 20 0

Lanes: 1 0 0 0 1 0 0 0 0 0 0 1 0 1 0 2 0 0

Volume Module:

Base Vol: 95 0 229 0 0 0 215 131 94 88 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 95 0 229 0 0 0 215 131 94 88 0

Added Vol: 7 0 118 0 0 0 206 2 34 169 0

PasserByVol: 117 0 176 0 0 0 176 264 0 0 0

Initial Fut: 219 0 523 0 0 0 421 309 392 257 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 219 0 523 0 0 0 421 309 392 257 0

Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.05 1.00 1.05 1.00

Final Vol: 219 0 523 0 0 0 442 325 392 270 0

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900

Adj: 0.95 1.00 0.85 1.00 1.00 0.94 0.94 0.95 1.00 1.00

Lanes: 1.00 0.00 1.00 0.00 0.00 0.00 1.15 0.85 1.00 2.00 0.00

Final Sat: 1805 0 1615 0 0 0 2058 1514 1805 3800 0

Capacity Analysis Module:

Vol/Sat: 0.12 0.00 0.32 0.00 0.00 0.00 0.21 0.21 0.22 0.07 0.00

Crit Moves: 0.43 0.00 0.43 0.00 0.00 0.00 0.28 0.28 0.29 0.57 0.00

Green/Cycle: 0.28 0.00 0.76 0.00 0.00 0.00 0.00 0.76 0.76 0.12 0.00

Volume/Cap: 0.28 0.00 0.76 0.00 0.00 0.00 0.00 0.76 0.76 0.12 0.00

Level Of Service Module:

Delay/Veh: 12.1 0.0 18.9 0.0 0.0 0.0 23.4 23.4 25.3 6.4 0.0

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 12.1 0.0 18.9 0.0 0.0 0.0 23.4 23.4 25.3 6.4 0.0

Queue: 4 0 13 0 0 0 12 9 11 3 0

NOBLD-PM.CMD

Mon Nov 4, 1996 15:06:42

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FISCO/Port Vision 2000 EIS/EIR

No Project Alternative

PM Peak Hour

Level Of Service Computation Report

1994 HCM Operations Method (Future Volume Alternative)

Intersection #8 Adeline St./ 3rd St.

Cycle (sec): 100

Loss Time (sec): 12 (Y+R = 4 sec)

Optimal Cycle: 92

Critical Vol./Cap. (X): 0.613

Average Delay (sec/veh): 38.1

Level Of Service: D

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Split Phase Split Phase Split Phase Split Phase

Rights: Include Include Include Include

Min. Green: 10 20 20 10 20 20 10 20 20 10 20 20

Lanes: 0 1 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0

Volume Module:

Base Vol: 36 0 122 43 0 15 30 14 13 89 39 78

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 36 0 122 43 0 15 30 14 13 89 39 78

Added Vol: 0 874 0 0 572 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 36 874 122 43 572 15 30 14 13 89 39 78

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 36 874 122 43 572 15 30 14 13 89 39 78

Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.05 1.05 1.05 1.05 1.05 1.05 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol: 38 918 128 45 601 16 30 14 13 89 39 78

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adj: 0.98 0.98 0.98 1.00 1.00 1.00 0.95 0.93 0.93 0.95 0.90 0.90

Lanes: 0.07 1.69 0.24 0.14 1.81 0.05 1.00 0.52 0.48 0.84 0.39 0.77

Final Sat: 131 3154 440 258 3450 92 1805 916 851 1512 663 1325

Capacity Analysis Module:

Vol/Sat: 0.29 0.29 0.29 0.17 0.17 0.17 0.02 0.02 0.02 0.06 0.06 0.06

Crit Moves: 0.30 0.30 0.30 0.18 0.18 0.18 0.20 0.20 0.20 0.20 0.20 0.20

Green/Cycle: 0.97 0.97 0.97 0.97 0.97 0.97 0.08 0.08 0.08 0.29 0.29 0.29

Volume/Cap: 0.97 0.97 0.97 0.97 0.97 0.97 0.08 0.08 0.08 0.29 0.29 0.29

Level Of Service Module:

Delay/Veh: 37.1 37.1 37.1 46.3 46.3 46.3 21.0 21.0 21.0 22.0 22.0 22.0

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 37.1 37.1 37.1 46.3 46.3 46.3 21.0 21.0 21.0 22.0 22.0 22.0

Queue: 2 31 6 3 21 1 1 0 0 2 1 2

Table J.7-2 (Continued)

NOBLD-PM.CMD		Mon Nov 4, 1996 15:06:42		Page 12-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 13-1	
No Project Alternative		No Project Alternative		PM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #12 Maritim/W. Grand/I-880 Ramps		Intersection #13 Adeline/5th/I-880 SB Ramps		Intersection #14 Adeline/5th/I-880 SB Ramps	
Cycle (sec):	100	Cycle (sec):	100	Cycle (sec):	100
Loss Time (sec):	10 (Y+R = 4 sec)	Loss Time (sec):	12 (Y+R = 4 sec)	Loss Time (sec):	12 (Y+R = 4 sec)
Optimal Cycle:	70	Optimal Cycle:	82	Optimal Cycle:	82
Level Of Service:	C	Level Of Service:	C	Level Of Service:	C
Approach:	North Bound	Approach:	North Bound	Approach:	North Bound
Movement:	L - T - R	Movement:	L - T - R	Movement:	L - T - R
Control:	Protected	Control:	Protected	Control:	Protected
Rights:	Include	Rights:	Include	Rights:	Include
Min. Green:	10 20 20 20 20 20 20 20	Min. Green:	10 20 20 20 20 20 20 20	Min. Green:	10 20 20 20 20 20 20 20
Lanes:	2 0 0 1 0 1 0 0 1 0 1 0 1 1 0 1 0	Lanes:	1 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 0	Lanes:	1 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 0
Volume Module:		Volume Module:		Volume Module:	
Base Vol:	0 23 0 23 23 20 454 210 0 624 13	Base Vol:	0 0 0 241 0 69 138 157 0 0 202 616	Base Vol:	0 0 0 241 0 69 138 157 0 0 202 616
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:	0 23 0 23 23 20 454 210 0 624 13	Initial Bse:	0 0 0 241 0 69 138 157 0 0 202 616	Initial Bse:	0 0 0 241 0 69 138 157 0 0 202 616
Added Vol:	366 0 140 0 0 0 0 0 224 106 0 0	Added Vol:	205 160 509 0 97 0 0 0 126 350 0 0	Added Vol:	205 160 509 0 97 0 0 0 126 350 0 0
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut:	366 23 140 9 23 23 20 454 434 106 624 13	Initial Fut:	205 160 509 241 97 69 138 157 126 350 202 616	Initial Fut:	205 160 509 241 97 69 138 157 126 350 202 616
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:	366 23 140 9 23 23 20 454 434 106 624 13	PHF Volume:	205 160 509 241 97 69 138 157 126 350 202 308	PHF Volume:	205 160 509 241 97 69 138 157 126 350 202 308
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0
PCE Adj:	366 23 140 9 23 23 20 454 434 106 624 13	PCE Adj:	205 160 509 241 97 69 138 157 126 350 202 308	PCE Adj:	205 160 509 241 97 69 138 157 126 350 202 308
MLF Adj:	1.03 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:	377 23 140 9 23 23 20 499 477 106 655 14	Final Vol.:	205 160 509 241 101 72 152 173 138 350 212 323	Final Vol.:	205 160 509 241 101 72 152 173 138 350 212 323
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:	0.95 0.87 0.87 0.95 0.93 0.93 0.95 0.93 0.93 0.95 1.00 1.00	Adjustment:	0.95 1.00 0.85 0.95 0.94 0.94 0.94 0.94 0.94 0.94 0.95 0.91	Adjustment:	0.95 1.00 0.85 0.95 0.94 0.94 0.94 0.94 0.94 0.94 0.95 0.91
Lanes:	2.00 0.14 0.86 1.00 0.50 0.50 1.00 1.53 1.47 1.00 1.96 0.04	Lanes:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Lanes:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Sat.:	3610 233 1420 1805 884 884 1805 2710 2591 1805 3720 80	Final Sat.:	1805 1900 1615 1805 2085 1487 1788 1989 1586 1805 1370 2088	Final Sat.:	1805 1900 1615 1805 2085 1487 1788 1989 1586 1805 1370 2088
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:	0.10 0.10 0.10 0.00 0.03 0.03 0.01 0.18 0.18 0.06 0.18 0.18	Vol/Sat:	0.11 0.08 0.32 0.13 0.05 0.05 0.09 0.09 0.09 0.19 0.15 0.15	Vol/Sat:	0.11 0.08 0.32 0.13 0.05 0.05 0.09 0.09 0.09 0.19 0.15 0.15
Crit Moves:	0.21 0.27 0.27 0.14 0.20 0.20 0.16 0.37 0.37 0.12 0.33 0.33	Crit Moves:	0.21 0.20 0.51 0.21 0.20 0.20 0.16 0.16 0.16 0.31 0.31 0.31	Crit Moves:	0.21 0.20 0.51 0.21 0.20 0.20 0.16 0.16 0.16 0.31 0.31 0.31
Green/Cycle:	0.50 0.36 0.36 0.04 0.13 0.13 0.07 0.50 0.50 0.50 0.54 0.54	Green/Cycle:	0.54 0.42 0.62 0.64 0.24 0.24 0.52 0.53 0.53 0.64 0.51 0.51	Green/Cycle:	0.54 0.42 0.62 0.64 0.24 0.24 0.52 0.53 0.53 0.64 0.51 0.51
Volume/Cap:	0.27 0.27 0.27 0.14 0.20 0.20 0.16 0.37 0.37 0.12 0.33 0.33	Volume/Cap:	0.54 0.42 0.62 0.64 0.24 0.24 0.52 0.53 0.53 0.64 0.51 0.51	Volume/Cap:	0.54 0.42 0.62 0.64 0.24 0.24 0.52 0.53 0.53 0.64 0.51 0.51
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh:	22.9 19.1 19.1 24.2 21.2 21.2 22.9 15.8 15.8 28.2 18.2 18.2	Delay/Veh:	23.9 22.7 12.4 25.7 21.8 21.8 25.1 25.2 25.2 21.0 18.8 18.8	Delay/Veh:	23.9 22.7 12.4 25.7 21.8 21.8 25.1 25.2 25.2 21.0 18.8 18.8
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:	22.9 19.1 19.1 24.2 21.2 21.2 22.9 15.8 15.8 28.2 18.2 18.2	AdjDel/Veh:	23.9 22.7 12.4 25.7 21.8 21.8 25.1 25.2 25.2 21.0 18.8 18.8	AdjDel/Veh:	23.9 22.7 12.4 25.7 21.8 21.8 25.1 25.2 25.2 21.0 18.8 18.8
Queue:	9 1 3 0 1 1 0 11 10 3 15 0	Queue:	5 4 11 6 2 2 4 5 4 9 5 8	Queue:	5 4 11 6 2 2 4 5 4 9 5 8

Table J.7-2 (Continued)

NOBLD-PM.CMD	Mon Nov 4, 1996 15:06:42	Page 14-1							
FISCO/Port Vision 2000 EIS/EIR									
No Project Alternative									
PM Peak Hour									
Level Of Service Computation Report									
1994 HCM Operations Method (Future Volume Alternative)									

Intersection #14 Union/5th/I-880 NB Ramps									

Cycle (sec):	100	Critical Vol./Cap. (X):	0.214						
Loss Time (sec):	11 (Y+R = 4 sec)	Average Delay (sec/veh):	16.3						
Optimal Cycle:	71	Level Of Service:	C						

Approach:	North Bound	South Bound	East Bound	West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R					
Control:	Protected	Protected	Split Phase	Split Phase					
Rights:	Include	Include	Include	Include					
Min. Green:	0 20 20	0 20 20	10 20 20	10 20 20					
Lanes:	0 0 1 1 1 0 0 1 1 0 0 1 0 1 0 1 0								

Volume Module:									
Base Vol:	0 194 281	30 31 97 18	32 31 34						
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00						
Initial Bse:	0 194 281	30 31 97 18	32 31 34						
Added Vol:	0 0 126	0 0 0 0	205 0 0						
PasserByVol:	0 0 0	0 0 0 0	0 0 0						
Initial Fut:	0 194 407	30 31 97 18	237 31 34						
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00						
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00						
PHF Volume:	0 194 407	30 31 97 18	237 31 34						
Reduced Vol:	0 0 0	0 0 0 0	0 0 0						
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00						
MLF Adj:	1.00 1.00 1.05	1.05 1.05 1.05	1.00 1.00 1.00						
Final Vol:	0 194 427	0 151 32 33 102 19	237 31 34						

Saturation Flow Module:									
Sat/Lane:	1900 1900	1900 1900	1900 1900	1900					
Adjustment:	1.00 0.97 0.97 0.97 0.97	0.97 0.97 0.97	0.97 0.95 1.00	0.85					
Lanes:	0.00 1.00 2.00	0.00 1.65 0.35	0.43 1.32 0.25	1.00 1.00 1.00					
Final Sat:	0 1900 3230	0 3041 645	790 2442 455	1805 1900 1615					

Capacity Analysis Module:									
Vol/Sat:	0.00 0.10	0.13 0.00 0.05	0.04 0.04	0.04 0.13 0.02	0.02				
Crit Moves:	0.00 0.35	0.35 0.00 0.35	0.20 0.20	0.20 0.34 0.34	0.34				
Green/Cycle:	0.00 0.29	0.38 0.00 0.14	0.21 0.21	0.21 0.38 0.05	0.06				
Volume/Cap:	0.00 0.29	0.38 0.00 0.14	0.21 0.21	0.21 0.38 0.05	0.06				

Level Of Service Module:									
Delay/Veh:	0.0 15.4 16.0	0.0 14.5 14.5	21.6 21.6	16.2 14.1 14.2					
User DelAdj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00					
AdjDel/Veh:	0.0 15.4 16.0	0.0 14.5 14.5	21.6 21.6	16.2 14.1 14.2					
Queue:	0 4 9	0 3 1 1 2	0 5 1	1					

NOBLD-PM.CMD	Mon Nov 4, 1996 15:06:42	Page 15-1							
FISCO/Port Vision 2000 EIS/EIR									
No Project Alternative									
PM Peak Hour									
Level Of Service Computation Report									
1994 HCM Operations Method (Future Volume Alternative)									

Intersection #15 7th/I-880 NB Ramp/Frontage Rd.									

Cycle (sec):	100	Critical Vol./Cap. (X):	0.417						
Loss Time (sec):	10 (Y+R = 4 sec)	Average Delay (sec/veh):	19.2						
Optimal Cycle:	70	Level Of Service:	C						

Approach:	North Bound	South Bound	East Bound	West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R					
Control:	Protected	Protected	Protected	Protected					
Rights:	Include	Ovl	Include	Include					
Min. Green:	10 20 20	10 20 20	10 20 20	0 20 20					
Lanes:	1 0 1 1 0 1 0 0 0 2 1 0 2 0 0 0 0 1 1 0								

Volume Module:									
Base Vol:	0 197 3	2 0 205	0 108	0 53 1					
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
Initial Bse:	0 197 3	2 0 205	0 108	0 53 1					
Added Vol:	391 0	0 0 181	258 6	0 0 2 0					
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0					
Initial Fut:	391 197	3 2 0 386	258 114	0 0 55 1					
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
PHF Volume:	391 197	3 2 0 386	258 114	0 0 55 1					
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0					
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00					
MLF Adj:	1.00 1.05 1.05	1.00 1.00 1.13	1.00 1.05 1.00	1.00 1.05 1.05					
Final Vol:	391 207	3 2 0 436	258 120	0 0 58 1					

Saturation Flow Module:									
Sat/Lane:	1900 1900	1900 1900	1900 1900	1900 1900					
Adjustment:	0.95 1.00 1.00	0.95 1.00 0.85	0.95 1.00 1.00	1.00 1.00 1.00					
Lanes:	1.00 1.97 0.03	1.00 0.00 2.00	1.00 2.00 0.00	0.00 1.97 0.03					
Final Sat:	1805 3746	54 1805	0 3230	1805 3800					

Capacity Analysis Module:									
Vol/Sat:	0.22 0.06	0.06 0.00 0.13	0.14 0.03	0.00 0.00 0.02	0.02				
Crit Moves:	0.22 0.06	0.06 0.00	0.13 0.14	0.03 0.00	0.02				
Green/Cycle:	0.30 0.33	0.33 0.17 0.00	0.40 0.20 0.40	0.00 0.00 0.20	0.20				
Volume/Cap:	0.72 0.17	0.17 0.01 0.00	0.34 0.72 0.08	0.00 0.00 0.08	0.08				

Level Of Service Module:									
Delay/Veh:	23.3 15.2	15.2 22.4	0.0 13.6	28.9 12.1	0.0				
User DelAdj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00				
AdjDel/Veh:	23.3 15.2	15.2 22.4	0.0 13.6	28.9 12.1	0.0				
Queue:	10 4	0 0	8 7	2 0	1				

Table J.7-2 (Continued)

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NOBLD-PM.CMD                               Mon Nov 4, 1996 15:06:42                               Page 16-1
-----
FISCO/Port Vision 2000 EIS/EIR
No Project Alternative
PM Peak Hour

Level of Service Computation Report
1994 HCM Operations Method (Future Volume Alternative)
-----
Intersection #16 7th/I-880 SB Ramp
-----
Cycle (sec):      100          Critical Vol./Cap. (X):      0.466
Loss Time (sec):   5 (Y+R = 4 sec) Average Delay (sec/veh):    6.3
Optimal Cycle:     35          Level of Service:              B
-----

Approach:          North Bound      South Bound      East Bound      West Bound
Movement:  L - T - R  L - T - R  L - T - R  L - T - R  L - T - R

Control:  Protected  Protected  Protected  Protected  Protected
Rights:   Include    Include    Include    Include    Include
Min. Green:  0 0 0 0 0 0 0 0 0 0 20 20 10 20 20
Lanes:      0 0 0 0 0 0 0 0 0 0 2 0 1 2 0 0
-----

Volume Module:
Base Vol: 0 0 0 0 0 0 0 0 0 0 0 0 7 378 0 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 0 0 0 0 0 0 0 0 0 0 0 7 378 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 264 534 0 574 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 0 0 0 0 0 0 0 264 541 378 574 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 0 0 0 0 0 0 0 0 0 264 541 378 574 0 0
Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 264 541 378 574 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.05 1.00 1.03 1.05 1.00 1.00
Final Vol.: 0 0 0 0 0 0 0 0 0 0 278 541 389 603 0 0
-----

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 1.00 0.95 1.00 1.00
Lanes: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 2.00 1.00 2.00 2.00 0.00
Final Sat.: 0 0 0 0 0 0 0 0 0 0 3800 1615 3610 3800 0 0
-----

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.33 0.11 0.16 0.00
Crit Moves: *****
Green/Cycle: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.72 0.72 0.23 0.95 0.00
Volume/Cap: 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.47 0.47 0.17 0.00
-----

Level of Service Module:
Delay/Veh: 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.8 4.1 21.7 0.1 0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.8 4.1 21.7 0.1 0.0
Queue: 0 0 0 0 0 0 0 0 2 6 9 1 0
-----

```

Mon Nov 4, 1996 15:06:42

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FISCO/Port Vision 2000 EIS/EIR

No Project Alternative

PM Peak Hour

Level Of Service Computation Report

1994 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 14th/I-880 Frontage Rd.

Average Delay (sec/veh):

1.8

Worst Case Level Of Service: C

Approach:

North Bound

South Bound

East Bound

West Bound

Movement:

L - T - R

L - T - R

L - T - R

L - T - R

L - T - R

Control:

Uncontrolled

Uncontrolled

Stop Sign

Stop Sign

Rights:

Include

Include

Include

Include

Lanes:

0 0 1 1 0

1 0 2 0 0

0 0 0 0 0

1 0 0 0 1

Volume Module:

Base Vol:

0 62 130

4 0 0 0 0

0 115 0 7

Growth Adj:

1.00 1.00 1.00

1.00 1.00 1.00

1.00 1.00 1.00

1.00 1.00 1.00

1.00 1.00 1.00

Initial Bse:

0 62 130

4 0 0 0 0

0 115 0 7

Added Vol:

0 258 0

0 181 0 0 0 0

0 0 0 0 0

PasserByVol:

0 0 0 0 0 0

0 0 0 0 0 0

0 0 0 0 0 0

Initial Fut:

0 320 130

4 181 0 0 0 0

0 115 0 7

User Adj:

1.00 1.00 1.00

1.00 1.00 1.00

1.00 1.00 1.00

1.00 1.00 1.00

1.00 1.00 1.00

PHF Adj:

1.00 1.00 1.00

1.00 1.00 1.00

1.00 1.00 1.00

1.00 1.00 1.00

1.00 1.00 1.00

PHF Volume:

0 320 130

4 181 0 0 0 0

0 115 0 7

Reduct Vol:

0 0 0 0 0 0

0 0 0 0 0 0

0 0 0 0 0 0

Final Vol:

0 320 130

4 181 0 0 0 0

0 115 0 7

Adjusted Volume Module:

Grade:

0%

0%

0%

0%

% Cycle/Cars:

xxxx xxxx

xxxx xxxx

xxxx xxxx

xxxx xxxx

xxxx xxxx

% Truck/Comb:

xxxx xxxx

xxxx xxxx

xxxx xxxx

xxxx xxxx

xxxx xxxx

PCE Adj:

1.10 1.00 1.00

1.10 1.00 1.00

1.10 1.10 1.10

1.10 1.10 1.10

1.10 1.10 1.10

Cycl/Car PCE:

xxxx xxxx

xxxx xxxx

xxxx xxxx

xxxx xxxx

xxxx xxxx

Trck/Cmb PCE:

xxxx xxxx

xxxx xxxx

xxxx xxxx

xxxx xxxx

xxxx xxxx

Adj Vol:

0 320 130

4 181 0 0 0 0

127 0 8

Critical Gap Module:

MoveUp Time:xxxxx

xxxxx

2.1 xxxxx xxxxxx

xxxxx xxxxxx

3.4 xxxxx 2.6

Critical Gp:xxxxx

xxxxx xxxxxx

5.5 xxxxx xxxxxx

xxxxx xxxxxx

7.0 xxxxx 5.5

Capacity Module:

Conflict Vol:

xxxx xxxx

xxxxx

450 xxxx xxxxxx

xxxxx xxxxxx

570 xxxx 225

Potent Cap.:

xxxx xxxx

xxxxx

983 xxxx xxxxxx

xxxxx xxxxxx

458 xxxx 1065

Adj Gap:

xxxx xxxx

xxxxx

1.00 xxxx xxxxxx

xxxxx xxxxxx

1.00 xxxx 1.00

Move Cap.:

xxxx xxxx

xxxxx

983 xxxx xxxxxx

xxxxx xxxxxx

455 xxxx 1065

Level Of Service Module:

Stopped Del:xxxxx

xxxxx

3.7 xxxxx xxxxxx

xxxxx xxxxxx

10.6 xxxxx 3.4

LOS by Move:

*

A

*

*

C

A

Movement:

LT - LTR - RT

LT - LTR - RT

LT - LTR - RT

LT - LTR - RT

LT - LTR - RT

Shared Cap.:

xxxx xxxx

xxxxx

xxxxx xxxxxx

xxxxx xxxxxx

xxxx xxxx xxxxxx

Shrd StpDel:xxxxx

xxxxx

xxxxx

xxxxx xxxxx

xxxxx xxxxx

xxxx xxxx xxxxxx

Shared LOS:

*

*

*

*

*

*

ApproachDel:

0.0

0.1

0.0

10.2

Table J.7-2 (Continued)

NOBLD-PM.CMD	Mon Nov 4, 1996 15:06:43	Page 18-1
FISCO/Port Vision 2000 EIS/EIR		
No Project Alternative		
PM Peak Hour		
Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		
Intersection #18 W.Grand/I-880 Frontage Rd.		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.614
Loss Time (sec):	11 (Y+R = 4 sec)	Average Delay (sec/veh): 21.6
Optimal Cycle:	81	Level Of Service: C
Approach: North Bound South Bound East Bound West Bound		
Movement:	L - T - R L - T - R L - T - R L - T - R	
Control:	Split Phase Split Phase Protected Protected	Protected
Rights:	Include Include Include Include	Include
Min. Green:	10 20 20 10 20 20 10 20 20 10 20 20	
Lanes:	1 0 1 1 0 1 1 0 1 0 1 0 1 0 1 1 1	
Volume Module:		
Base Vol:	75 72 0 759 0 6 86 277 3 0 456 330	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	75 72 0 759 0 6 86 277 3 0 456 330	
Added Vol:	0 173 85 0 121 0 0 140 0 0 60 106 0	
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut:	75 245 85 759 121 6 86 417 3 60 562 330	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	75 245 85 759 121 6 86 417 3 60 562 330	
Reduct Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	75 245 85 759 121 6 86 417 3 60 562 330	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.00 1.05 1.05 1.05 1.00 1.00 1.00 1.05 1.05 1.00 1.10 1.10	
Final Vol.:	75 257 89 797 121 6 86 438 3 60 618 363	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	0.95 0.96 0.96 0.95 0.99 0.99 0.95 1.00 1.00 0.95 0.94 0.94	
Lanes:	1.00 1.49 0.51 2.00 0.95 0.05 1.00 1.99 0.01 1.00 1.89 1.11	
Final Sat.:	1805 2710 938 3610 1792 89 1805 3774 26 1805 3375 1983	
Capacity Analysis Module:		
Vol/Sat:	0.04 0.09 0.09 0.22 0.07 0.07 0.05 0.12 0.12 0.03 0.18 0.18	
Crit Moves:	****	****
Green/Cycle:	0.20 0.20 0.20 0.32 0.32 0.32 0.10 0.24 0.24 0.12 0.27 0.27	
Volume/Cap:	0.21 0.47 0.47 0.68 0.21 0.21 0.48 0.47 0.47 0.27 0.68 0.68	
Level Of Service Module:		
Delay/Veh:	21.6 23.2 23.2 20.0 15.9 15.9 29.0 21.1 21.1 25.9 22.2 22.2	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	21.6 23.2 23.2 20.0 15.9 15.9 29.0 21.1 21.1 25.9 22.2 22.2	
Queue:	2 6 2 20 2 0 2 10 0 2 16 10	

Table J7-3

A-AM.CMD		Tue Nov 5, 1996 13:15:10				Page 1-1			
		FISCO/Port Vision 2000 EIS/EIR							
		Maximum Marine/Maximum Rail Alternative							
		AM Peak Hour							
Trip Generation Report									
Forecast for AM Peak Hour									
Zone #	Subzone	Amount	Units	Rate	In	Out	Trips In	Trips Out	Total % Of Trips Total

1	New Harbor	1018.00	Employees	0.26	0.05	0.05	265	51	316 5.1
	Zone 1 Subtotal						265	51	316 5.1
3	J.I.T.	360.00	Employees	0.40	0.09	0.09	144	32	176 2.9
	Zone 3 Subtotal						144	32	176 2.9
6	Middle Harbr	516.00	Employees	0.26	0.05	0.05	134	26	160 2.6
	Zone 6 Subtotal						134	26	160 2.6
7	7th St Harbr	613.00	Employees	0.26	0.05	0.05	159	31	190 3.1
	Zone 7 Subtotal						159	31	190 3.1
8	Outer Harbor	706.00	Employees	0.26	0.05	0.05	184	35	219 3.5
	Zone 8 Subtotal						184	35	219 3.5
10	New Park	1.00	Total Trips	15.00	15.00	15.00	15	15	30 0.5
	Zone 10 Subtotal						15	15	30 0.5
11	New Harbor	1.00	Trucks Inter	248.00	264.00	264.00	248	264	512 8.3
	Zone 11 Subtotal						248	264	512 8.3
16	Middle Harbr	1.00	Trucks Inter	125.00	133.00	133.00	125	133	258 4.2
	Zone 16 Subtotal						125	133	258 4.2
17	7th St Harbr	1.00	Trucks Inter	149.00	159.00	159.00	149	159	308 5.0
	Zone 17 Subtotal						149	159	308 5.0
18	Outer Harbor	1.00	Trucks Inter	172.00	183.00	183.00	172	183	355 5.8
	Zone 18 Subtotal						172	183	355 5.8
21	New Harbor	1.00	Truck External	476.00	508.00	508.00	476	508	984 15.9
	Zone 21 Subtotal						476	508	984 15.9
23	J.I.T.	1.00	Truck External	431.00	459.00	459.00	431	459	890 14.4
	Zone 23 Subtotal						431	459	890 14.4
26	Middle Harbr	1.00	Truck External	241.00	257.00	257.00	241	257	498 8.1
	Zone 26 Subtotal						241	257	498 8.1
27	7th St Harbr	1.00	Truck External	287.00	306.00	306.00	287	306	593 9.6
	Zone 27 Subtotal						287	306	593 9.6
28	Outer Harbor	1.00	Truck External	331.00	352.00	352.00	331	352	683 11.1

TOTAL									3361, 2811 6172 100.0

Zone 28 Subtotal							331	352	683 11.1

Zone									
#									
Subzone									
Amount									
Units									
Rate									
In									
Out									
Trips									
In									
Out									
Total % Of									
Trips Total									

A-AM.CMD		Tue Nov 5, 1996 13:15:11				Page 1-2			
		FISCO/Port Vision 2000 EIS/EIR							
		Maximum Marine/Maximum Rail Alternative							
		AM Peak Hour							
Trip Generation Report									
Forecast for AM Peak Hour									
Zone #	Subzone	Amount	Units	Rate	In	Out	Trips In	Trips Out	Total % Of Trips Total

Zone 28 Subtotal							331	352	683 11.1

TOTAL									3361, 2811 6172 100.0

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J.7-27

FISCO/Port Vision 2000 EIS/EIR
Maximum Marine/Maximum Rail Alternative
AM Peak Hour

Trip Distribution Report

Percent Of Trips Existing

Zone	To Gates									
	3	4	5	11	12	13	14	15	16	
1	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0	
3	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0	
6	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0	
7	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0	
8	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0	
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	
11	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
17	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
18	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
21	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0	
23	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0	
26	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0	
27	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0	
28	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0	

----- FISCO/Port Vision 2000 EIS/EIR
Maximum Marine/Maximum Rail Alternative
AM Peak Hour

Turning Movement Report

AM Peak Hour

Volume		Northbound		Southbound		Eastbound		Westbound		Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#3 Maritime St./ Burma St.										
Base	5	78	0	0	287	0	0	0	0	375
Added	0	253	0	0	385	180	109	0	0	928
Total	5	331	0	0	672	180	109	0	5	1303
#4 Maritime St./ 14th St.										
Base	0	91	39	103	261	0	0	0	22	603
Added	399	169	0	0	277	108	84	0	377	1414
Total	399	260	39	103	538	108	84	0	377	2017
#5 Maritime St./ 7th St. Extension										
Base	159	0	0	0	0	334	69	0	37	599
Added	910	337	0	0	383	271	231	0	829	2961
Total	1069	337	0	0	383	605	300	0	866	3560
#6 7th St./ 7th St. Extension										
Base	0	0	0	0	0	0	0	0	0	54
Added	0	0	0	625	0	586	533	306	0	367
Total	0	0	0	625	0	586	533	306	0	769
#7										
Base	53	0	45	0	0	0	0	0	0	683
Added	0	0	0	0	0	0	0	495	0	1140
Total	53	0	45	0	0	0	0	495	39	1823
#8 Adeline St./ 3rd St.										
Base	8	0	31	26	0	26	8	6	29	299
Added	0	778	0	0	1020	0	0	0	0	1798
Total	8	778	31	26	1020	26	8	6	29	2097
#9 7th/Middle Harbor Rd										
Base	0	0	0	0	0	0	0	0	0	1
Added	17	0	332	0	0	0	0	508	3	1814
Total	17	0	332	0	0	0	0	508	3	1815
#10 New Harbor/Mid Harbor Rd										
Base	0	0	0	0	0	0	0	0	0	0
Added	332	0	491	0	0	0	0	3	361	1833
Total	332	0	491	0	0	0	0	3	361	1833
#12 Maritime St./ W.Grand Ave./ I-880 Ramps										
Base	0	33	0	16	28	47	48	394	438	1313
Added	298	0	65	0	0	0	0	0	483	928
Total	298	33	65	16	28	47	48	394	921	2241

Table J7-3 (Continued)

A-AM.CMD		Tue Nov 5, 1996 13:15:11				Page 3-2		A-AM.CMD		Tue Nov 5, 1996 13:15:11				Page 3-3	
		FISCO/Port Vision 2000 EIS/EIR								FISCO/Port Vision 2000 EIS/EIR					
		Maximum Marine/Maximum Rail Alternative								Maximum Marine/Maximum Rail Alternative					
		AM Peak Hour								AM Peak Hour					
Volume	Northbound	Southbound	Eastbound	Westbound	Total			Volume	Northbound	Southbound	Eastbound	Westbound	Total		
Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right Volume	Left Thru Right	Left Thru Right	Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right Volume	Left Thru Right	Left Thru Right Volume
#13 Adeline St./ 5th St./ I-880 SB Ramp															
Base	0	0	72	109	165	256	51	0	0	169	364	1186	0	-358	0
Added	195	150	433	0	203	0	0	264	554	0	0	1798	0	382	0
Total	195	150	433	72	312	165	256	51	264	554	169	364	2984	0	24
#14 Union St./ 5th St./ I-880 North Ramps															
Base	0	175	45	0	154	31	24	43	13	205	31	115	836	0	-358
Added	0	0	264	0	0	0	0	0	195	0	0	459	0	382	0
Total	0	175	309	0	154	31	24	43	13	400	31	115	1295	0	24
#15 7th St./ I-880 NB Ramps / Frontage Rd.															
Base	0	548	21	17	0	94	0	16	0	0	62	1	759	0	-464
Added	707	0	0	0	0	354	313	4	0	20	0	1400	0	535	0
Total	707	548	21	17	0	448	313	20	0	82	1	2159	0	71	0
#16 7th St./ I-880 SB Ramps															
Base	0	0	0	0	0	0	0	0	65	0	0	0	0	-722	0
Added	0	0	0	0	0	0	318	614	0	1082	0	2013	0	878	0
Total	0	0	0	0	0	0	318	614	65	1082	0	2078	0	156	0
#17 14th St./ I-880 Frontage Rd.															
Base	0	0	89	30	0	0	0	0	140	0	6	265	0	-717	0
Added	0	313	0	0	354	0	0	0	0	0	0	668	0	903	0
Total	0	313	89	30	354	0	0	0	140	0	6	933	0	186	0
#18 W. Grand Ave./ I-880 Frontage Rd.															
Base	9	0	0	678	48	6	65	234	12	0	152	449	1653	0	-480
Added	0	164	149	0	195	0	0	65	0	159	82	0	814	0	524
Total	9	164	149	678	243	6	65	299	12	159	234	449	2467	0	44
#134															
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	-395	0
Added	0	0	694	0	0	0	0	491	0	739	575	0	2499	0	447
Total	0	0	694	0	0	0	0	491	0	739	575	0	2499	0	52
#138															
Base	0	-156	0	0	-173	-26	-24	0	0	0	0	0	0	-845	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0	910	0
Total	0	-156	0	0	-173	-26	-24	0	0	0	0	0	0	65	0
#158															
Base	0	-180	-129	0	0	0	0	0	0	0	0	0	0	-932	0
Added	0	210	118	0	0	0	0	0	0	0	0	0	0	1047	0
Total	0	30	-11	0	0	0	0	0	0	0	0	0	0	115	0

Table J7-3 (Continued)

A-AM.CMD	Tue Nov 5, 1996 13:15:11										Tue Nov 5, 1996 13:15:11										Page 3-5									
	FISCO/Port Vision 2000 EIS/EIR										FISCO/Port Vision 2000 EIS/EIR										Maximum Marine/Maximum Rail Alternative									
	AM Peak Hour										AM Peak Hour										AM Peak Hour									
	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
#204																														
Base	0	0	0	-352	-580	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-692
Added	0	0	0	392	655	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	40	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#207																														
Base	0	-714	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-692
Added	0	831	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#214																														
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	-546	-564	0	-1110	0	0	0	0	0	0	0	0	0	0	0	0	-692
Added	0	0	0	0	0	0	0	0	0	0	0	0	0	554	707	0	1261	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	8	143	0	151	0	0	0	0	0	0	0	0	0	0	0	0	0
#217																														
Base	0	0	0	0	-45	0	0	-25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-70
Added	0	0	0	0	25	0	0	41	0	0	0	0	0	0	0	0	66	0	0	0	0	0	0	0	0	0	0	0	0	66
Total	0	0	0	0	-20	0	0	16	0	0	0	0	0	0	0	0	-4	0	0	0	0	0	0	0	0	0	0	0	0	-4
#218																														
Base	0	-21	0	0	0	0	0	-21	-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-46
Added	0	9	0	0	0	0	0	37	4	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	50
Total	0	-12	0	0	0	0	0	16	-0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
#219																														
Base	0	-43	0	0	0	0	0	0	0	0	0	0	0	0	-20	0	-63	0	0	0	0	0	0	0	0	0	0	0	0	-63
Added	0	46	0	0	0	0	0	0	0	0	0	0	0	0	20	0	67	0	0	0	0	0	0	0	0	0	0	0	0	67
Total	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
#220																														
Base	0	0	0	0	-45	-34	0	0	0	0	0	0	0	0	-20	0	-99	0	0	0	0	0	0	0	0	0	0	0	0	-99
Added	0	0	0	0	25	55	0	0	0	0	0	0	0	0	20	0	100	0	0	0	0	0	0	0	0	0	0	0	0	100
Total	0	0	0	0	-20	21	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
#225																														
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-396	-20	-416	0	0	0	0	0	0	0	0	0	0	0	0	-416
Added	0	0	0	0	0	0	0	0	0	0	0	0	0	0	430	20	451	0	0	0	0	0	0	0	0	0	0	0	0	451
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	0	35	0	0	0	0	0	0	0	0	0	0	0	0	35
#226																														
Base	0	0	0	-4	0	0	0	0	-352	0	0	0	0	0	0	0	-356	0	0	0	0	0	0	0	0	0	0	0	0	-356
Added	0	0	0	4	0	0	0	0	392	0	0	0	0	0	0	0	396	0	0	0	0	0	0	0	0	0	0	0	0	396
Total	0	0	0	-0	0	0	0	0	40	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	40

Table J7-3 (Continued)

A-AM.CMD			Tue Nov 5, 1996 13:15:11						A-AM.CMD			Tue Nov 5, 1996 13:15:11						Page 4-4		
FISCO/Port Vision 2000 EIS/EIR																				
Maximum Marine/Maximum Rail Alternative																				
AM Peak Hour																				

Volume	NB Link		SB Link		EB Link		WB Link		In		Out		Total		In		Out		Total	
Type	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Total	Volume

#159																				
Base	-180	0	-180	0	0	0	-358	-358	-178	0	-178	-716								
Added	210	0	210	0	0	0	382	382	173	0	173	764								
Total	30	0	30	0	0	0	24	24	-5	0	-5	48								

#160																				
Base	0	-178	-178	0	0	0	-180	-180	-358	0	-358	-716								
Added	0	173	173	0	0	0	210	210	382	0	382	764								
Total	0	-5	-5	0	0	0	30	30	24	0	24	48								

#161																				
Base	0	-464	-464	-178	0	-178	-286	0	-286	0	0	-928								
Added	0	535	535	173	0	173	363	0	363	0	0	1071								
Total	0	71	71	-5	0	-5	77	0	77	0	0	143								

#165																				
Base	0	-722	-722	-227	0	-227	-495	0	-495	0	0	-1444								
Added	0	878	878	264	0	264	614	0	614	0	0	1755								
Total	0	156	156	37	0	37	119	0	119	0	0	311								

#170																				
Base	-717	0	-717	0	-153	-153	0	0	0	0	-564	-1434								
Added	903	0	903	0	195	195	0	0	0	0	707	1805								
Total	186	0	186	0	42	42	0	0	0	0	143	371								

#177																				
Base	0	-351	-351	0	-129	-129	0	0	0	0	-129	-960								
Added	0	406	406	0	406	118	0	118	0	118	118	1048								
Total	0	55	55	0	55	-11	0	-11	0	-11	0	88								

#178																				
Base	-266	0	-266	0	-370	-370	-129	0	-129	0	-25	-790								
Added	330	0	330	0	406	406	118	0	118	0	41	895								
Total	64	0	64	0	36	36	-11	0	-11	0	16	105								

#182																				
Base	-370	0	-370	-475	-370	-845	0	-475	-475	0	0	-1690								
Added	406	0	406	504	406	910	0	504	504	0	0	1820								
Total	36	0	36	29	36	65	0	29	29	0	0	130								

#201																				
Base	0	0	0	0	0	0	-932	0	-932	0	-932	-1864								
Added	0	0	0	0	0	0	1047	0	1047	0	1047	2093								
Total	0	0	0	0	0	0	115	0	115	0	115	229								

Table J7-3 (Continued)

A-AM.CMD				Tue Nov 5, 1996 13:15:11				A-AM.CMD				Tue Nov 5, 1996 13:15:11				Page 5-1			
				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR							
				Maximum Marine/Maximum Rail Alternative				Maximum Marine/Maximum Rail Alternative				Maximum Marine/Maximum Rail Alternative							
				AM Peak Hour				AM Peak Hour				AM Peak Hour							
				Impact Analysis Report				Impact Analysis Report				Impact Analysis Report							
				Level Of Service				Level Of Service				Level Of Service							
				Intersection				Intersection				Intersection							
				Base				Base				Base							
				Del/ V/				Del/ V/				Del/ V/							
				LOS Veh C				LOS Veh C				LOS Veh C							
				B 6.3 0.089				B 6.3 0.089				B 6.3 0.089							
				C 15.0 0.161				C 15.0 0.161				C 15.0 0.161							
				C 20.5 0.803				C 20.5 0.803				C 20.5 0.803							
				C 17.5 0.897				C 17.5 0.897				C 17.5 0.897							
				B 14.6 0.770				B 14.6 0.770				B 14.6 0.770							
				F 72.1 0.660				F 72.1 0.660				F 72.1 0.660							
				C 15.9 0.594				C 15.9 0.594				C 15.9 0.594							
				C 20.9 0.821				C 20.9 0.821				C 20.9 0.821							
				C 16.6 0.526				C 16.6 0.526				C 16.6 0.526							
				C 23.6 0.819				C 23.6 0.819				C 23.6 0.819							
				C 17.6 0.392				C 17.6 0.392				C 17.6 0.392							
				C 21.3 0.565				C 21.3 0.565				C 21.3 0.565							
				A 1.4 0.420				A 1.4 0.420				A 1.4 0.420							
				C 3.0 0.000				C 3.0 0.000				C 3.0 0.000							
				C 21.3 0.457				C 21.3 0.457				C 21.3 0.457							

Table J7-3 (Continued)

A-AM.CMD	Tue Nov 5, 1996 13:15:11	Page 8-1									
FISCO/Port Vision 2000 EIS/EIR											
Maximum Marine/Maximum Rail Alternative											
AM Peak Hour											
Level Of Service Computation Report											
1994 HCM Operations Method (Future Volume Alternative)											
Intersection #5 Maritime St./ 7th St. Extension											
Cycle (sec):	100	Critical Vol./Cap. (X):								0.897	
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):								17.5	
Optimal Cycle:	98	Level Of Service:								C	
Approach: North Bound South Bound East Bound West Bound											
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl	Ovl
Min. Green:	10 20 0 0 0 20 20 10 0 20 0 0 0 0										
Lanes:	2 0 2 0 0 0 0 2 0 1 2 0 0 0 0 0										
Volume Module:											
Base Vol:	159	0	0	0	334	69	0	37	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	0	0	0	334	69	0	37	0	0	0
Added Vol:	910	337	0	0	383	271	231	0	829	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1069	337	0	0	383	605	300	0	866	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1069	337	0	0	383	605	300	0	866	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1069	337	0	0	383	605	300	0	866	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.03	1.05	1.00	1.00	1.05	1.00	1.03	1.00	1.00	1.00	1.00
Final Vol:	1101	354	0	0	402	605	309	0	866	0	0
Saturation Flow Module:											
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	1.00	0.85	0.95	1.00	0.85	1.00	1.00	1.00
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00
Final Sat:	3610	3800	0	0	3800	1615	3610	0	1615	0	0
Capacity Analysis Module:											
Vol/Sat:	0.30	0.09	0.00	0.00	0.11	0.37	0.09	0.00	0.54	0.00	0.00
Crit Moves:	0.35	0.66	0.00	0.00	0.31	0.57	0.26	0.00	0.61	0.00	0.00
Green/Cycle:	0.35	0.66	0.00	0.00	0.31	0.57	0.26	0.00	0.61	0.00	0.00
Volume/Cap:	0.88	0.14	0.00	0.00	0.34	0.65	0.33	0.00	0.88	0.00	0.00
Level Of Service Module:											
Delay/Veh:	25.3	4.2	0.0	0.0	17.2	10.5	19.3	0.0	17.4	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.3	4.2	0.0	0.0	17.2	10.5	19.3	0.0	17.4	0.0	0.0
Queue:	31	4	0	0	9	12	7	0	23	0	0

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A-AM.CMD	Tue Nov 5, 1996 13:15:11	Page 9-1

FISCO/Port Vision 2000 EIS/EIR		
Maximum Marine/Maximum Rail Alternative		
AM Peak Hour		

Volume Module:				
Base Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
Initial Bse:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
Added Vol:	0 0 0 625 0 586 533 306 0 0 0 0 0 0 0			
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
Initial Fut:	0 0 0 625 0 586 533 306 0 0 0 0 0 0 0			
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
PHF Volume:	0 0 0 625 0 586 533 306 0 0 0 0 0 0 0			
Reduct Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
Reduced Vol:	0 0 0 625 0 586 533 306 0 0 0 0 0 0 0			
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
MLF Adj:	1.00 1.00 1.00 1.00 1.03 1.00 1.00 1.03 1.05 1.00 1.03 1.05 1.00 1.00 1.05			
Final Vol:	0 0 0 644 0 586 549 322 0 0 0 0 0 0 0			
Saturation Flow Module:				
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900			
Adjustment:	1.00 1.00 1.00 1.00 0.95 1.00 0.85 0.95 1.00 1.00 1.00 1.00 1.00 1.00 0.85			
Lanes:	0.00 0.00 0.00 0.00 2.00 0.00 1.00 2.00 2.00 0.00 0.00 0.00 1.00 1.00 2.00			
Final Sat:	0 0 0 3610 0 1615 3610 3800 0 0 0 0 0 0 0			
Capacity Analysis Module:				
Vol/Sat:	0.00 0.00 0.00 0.00 0.18 0.00 0.36 0.15 0.08 0.00 0.00 0.19 0.25 0.00 0.25			
Crit Moves:	0.00 0.00 0.00 0.00 0.47 0.00 0.47 0.20 0.45 0.00 0.00 0.25 0.72 0.00 0.72			
Green/Cycle:	0.00 0.00 0.00 0.00 0.38 0.00 0.77 0.77 0.19 0.00 0.00 0.77 0.35 0.00 0.35			
Volume/Cap:	0.00 0.00 0.00 0.00 0.38 0.00 0.77 0.77 0.19 0.00 0.00 0.77 0.35 0.00 0.35			
Level Of Service Module:				
Delay/Veh:	0.0 0.0 0.0 11.1 0.0 17.5 28.1 10.7 0.0 0.0 0.0 24.2 3.3 0.0 3.3			
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
AdjDel/Veh:	0.0 0.0 0.0 11.1 0.0 17.5 28.1 10.7 0.0 0.0 0.0 24.2 3.3 0.0 3.3			
Queue:	0 0 0 12 0 14 15 5 0 0 0 10 8 0 8			

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Table J7-3 (Continued)

A-AM.CMD	Tue Nov 5, 1996 13:15:11	Page 10-1
FISCO/Port Vision 2000 EIS/EIR		
Maximum Marine/Maximum Rail Alternative		
AM Peak Hour		
Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		
Intersection #8 Adeline St./ 3rd St.		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.660
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh): 72.1
Optimal Cycle:	92	Level Of Service: F
Approach: North Bound South Bound East Bound West Bound		
Movement:	L - T - R L - T - R L - T - R L - T - R	
Control:	Split Phase Split Phase Split Phase Split Phase	
Rights:	Include Include Include Include	
Min. Green:	10 20 20 10 20 20 10 20 20	
Lanes:	0 1 0 1 0 0 1 0 1 0 0 1 0 1 0	
Volume Module:		
Base Vol:	8 0 31 26 0 26 8 6 29 50 59 56	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	8 0 31 26 0 26 8 6 29 50 59 56	
Added Vol:	0 778 0 0 1020 0 0 0 0 0 0 0	
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut:	8 778 31 26 1020 26 8 6 29 50 59 56	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	8 778 31 26 1020 26 8 6 29 50 59 56	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	8 778 31 26 1020 26 8 6 29 50 59 56	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.05 1.05 1.05 1.05 1.05 1.05 1.00 1.00 1.00 1.05 1.05 1.05	
Final Vol.:	8 817 33 27 1071 27 8 6 29 53 62 59	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	0.99 0.99 0.99 1.00 1.00 1.00 0.97 0.97 0.85 0.94 0.94 0.94	
Lanes:	0.02 1.90 0.08 0.05 1.90 0.05 0.57 0.43 1.00 0.61 0.71 0.68	
Final Sat.:	35 3582 145 91 3618 91 1053 790 1615 1089 1273 1212	
Capacity Analysis Module:		
Vol/Sat:	0.23 0.23 0.30 0.30 0.30 0.01 0.01 0.02 0.05 0.05 0.05 0.05	
Crit Moves:	0.21 0.21 0.21 0.27 0.27 0.27 0.20 0.20 0.20 0.20 0.20 0.20	
Green/Cycle:	1.09 1.09 1.09 1.09 1.09 1.09 0.04 0.04 0.09 0.24 0.24 0.24	
Volume/Cap:	1.09 1.09 1.09 1.09 1.09 1.09 0.04 0.04 0.09 0.24 0.24 0.24	
Level Of Service Module:		
Delay/Veh:	80.6 80.6 75.4 75.4 75.4 20.8 20.8 21.1 21.8 21.8 21.8	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	80.6 80.6 75.4 75.4 75.4 20.8 20.8 21.1 21.8 21.8 21.8	
Queue:	1 38 3 3 49 3 0 0 1 1 1	

A-AM.CMD	Tue Nov 5, 1996 13:15:11	Page 11-1
FISCO/Port Vision 2000 EIS/EIR		
Maximum Marine/Maximum Rail Alternative		
AM Peak Hour		
Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		
Intersection #9 7th/Middle Harbor Rd		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.594
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh): 15.9
Optimal Cycle:	58	Level Of Service: C
Approach: North Bound South Bound East Bound West Bound		
Movement:	L - T - R L - T - R L - T - R L - T - R	
Control:	Protected Protected Protected Protected	
Rights:	Include Include Include Include	
Min. Green:	10 0 20 0 0 0 0 0 20 20 20 10 20 0	
Lanes:	1 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0	
Volume Module:		
Base Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Added Vol:	17 0 332 0 0 0 0 0 508 3 361 593 0 0	
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut:	17 0 332 0 0 0 0 0 508 3 361 593 1	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	17 0 332 0 0 0 0 0 508 3 361 593 1	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	17 0 332 0 0 0 0 0 508 3 361 593 1	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.05 1.05 1.00 1.05 1.05	
Final Vol.:	17 0 332 0 0 0 0 0 533 4 361 622 1	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	0.95 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00	
Lanes:	1.00 0.00 1.00 0.00 0.00 0.00 0.00 0.00 1.99 0.01 1.00 1.99 0.01	
Final Sat.:	1805 0 1615 0 0 0 0 0 3772 28 1805 3794 6	
Capacity Analysis Module:		
Vol/Sat:	0.01 0.00 0.21 0.00 0.00 0.00 0.00 0.14 0.14 0.20 0.16 0.16	
Crit Moves:	0.35 0.00 0.35 0.00 0.00 0.00 0.00 0.24 0.24 0.34 0.57 0.57	
Green/Cycle:	0.03 0.00 0.59 0.00 0.00 0.00 0.00 0.59 0.59 0.59 0.29 0.29	
Volume/Cap:	0.03 0.00 0.59 0.00 0.00 0.00 0.00 0.59 0.59 0.59 0.29 0.29	
Level Of Service Module:		
Delay/Veh:	14.0 0.0 18.7 0.0 0.0 0.0 0.0 22.6 22.6 18.9 7.0 7.0	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	14.0 0.0 18.7 0.0 0.0 0.0 0.0 22.6 22.6 18.9 7.0 7.0	
Queue:	0 0 8 0 0 0 0 13 0 9 9 0	

Table J7-3 (Continued)

A-AM.CMD	Tue Nov 5, 1996 13:15:11										Page 12-1									
FISCO/Port Vision 2000 EIS/EIR										FISCO/Port Vision 2000 EIS/EIR										
Maximum Marine/Maximum Rail Alternative										Maximum Marine/Maximum Rail Alternative										
AM Peak Hour										AM Peak Hour										
Level Of Service Computation Report										Level Of Service Computation Report										
1994 HCM Operations Method (Future Volume Alternative)										1994 HCM Operations Method (Future Volume Alternative)										
Intersection #10 New Harbor/Mid Harbor Rd										Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps										
Cycle (sec):	100	Critical Vol./Cap. (X):	0.821	Cycle (sec):	100	Critical Vol./Cap. (X):	0.526	Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	20.9	Loss Time (sec):	10 (Y+R = 4 sec)	Average Delay (sec/veh):	16.6					
Optimal Cycle:	70	Level Of Service:	C	Optimal Cycle:	70	Level Of Service:	C													
Approach: North Bound South Bound East Bound West Bound										Approach: North Bound South Bound East Bound West Bound										
Movement: L - T - R L - T - R L - T - R L - T - R										Movement: L - T - R L - T - R L - T - R L - T - R										
Control: Protected Protected Protected Protected										Control: Protected Protected Protected Protected										
Rights: Ovl Include Include Include										Rights: Include Include Include Include										
Min. Green: 10 0 20 0 0 0 0 0 20 20 10 20 0										Min. Green: 10 20 20 10 20 20 10 20 20 10 20 20										
Lanes: 1 0 0 0 1 0 0 0 0 0 1 1 0 1 0 2 0 0										Lanes: 2 0 0 1 0 1 0 0 1 0 1 0 1 1 1 1 0 1 1 0										
Volume Module:										Volume Module:										
Base Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0										Base Vol: 0 33 0 16 28 47 48 394 438 0 300 9										
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										
Initial Bse: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0										Initial Bse: 0 33 0 16 28 47 48 394 438 0 300 9										
Added Vol: 332 0 491 0 0 0 0 3 361 628 17 0 0										Added Vol: 298 0 65 0 0 0 0 0 0 483 82 0 0 0										
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0										PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0										
Initial Fut: 332 0 491 0 0 0 0 3 361 628 17 0 0										Initial Fut: 298 33 65 16 28 47 48 394 921 82 300 9										
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										
PHF Volume: 332 0 491 0 0 0 0 3 361 628 17 0 0										PHF Volume: 298 33 65 16 28 47 48 394 921 82 300 9										
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0										Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0										
Reduced Vol: 332 0 491 0 0 0 0 3 361 628 17 0 0										Reduced Vol: 298 33 65 16 28 47 48 394 921 82 300 9										
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										MLF Adj: 1.03 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										
Final Vol: 332 0 491 0 0 0 0 3 361 628 18 0										Final Vol: 307 33 65 16 28 47 48 394 967 82 315 9										
Saturation Flow Module:										Saturation Flow Module:										
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900										Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900										
Adjustment: 0.95 1.00 0.85 1.00 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00 1.00										Adjustment: 0.95 0.90 0.90 0.95 0.91 0.91 0.95 1.00 0.85 0.95 1.00 1.00 1.00										
Lanes: 1.00 0.00 1.00 0.00 0.00 0.00 0.00 1.00 1.00 2.00 2.00 0.00 0.00										Lanes: 2.00 0.34 0.66 1.00 0.37 0.63 1.00 1.00 2.00 1.00 1.94 0.06 0.06										
Final Sat: 1805 0 1615 0 0 0 0 1900 1615 1805 3800 0										Final Sat: 3610 576 1134 1805 645 1084 1805 1900 3230 1805 3694 106										
Capacity Analysis Module:										Capacity Analysis Module:										
Vol/Sat: 0.18 0.00 0.30 0.00 0.00 0.00 0.00 0.00 0.00 0.22 0.35 0.00 0.00										Vol/Sat: 0.09 0.06 0.06 0.01 0.04 0.04 0.03 0.21 0.30 0.05 0.09 0.09										
Crit Moves: ****										Crit Moves: ****										
Green/Cycle: 0.22 0.00 0.65 0.00 0.00 0.00 0.00 0.27 0.42 0.70 0.00										Green/Cycle: 0.13 0.22 0.22 0.11 0.20 0.20 0.19 0.47 0.47 0.10 0.38 0.38										
Volume/Cap: 0.82 0.00 0.47 0.00 0.00 0.00 0.00 0.01 0.82 0.82 0.01 0.00										Volume/Cap: 0.64 0.26 0.26 0.08 0.22 0.22 0.14 0.44 0.64 0.45 0.23 0.23										
Level Of Service Module:										Level Of Service Module:										
Delay/Veh: 32.6 0.0 6.0 0.0 0.0 0.0 0.0 17.1 30.1 21.4 3.0 0.0										Delay/Veh: 28.6 20.8 20.8 25.8 21.7 21.7 21.8 11.6 13.6 28.7 13.7 13.7										
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00										
AdjDel/Veh: 32.6 0.0 6.0 0.0 0.0 0.0 0.0 17.1 30.1 21.4 3.0 0.0										AdjDel/Veh: 28.6 20.8 20.8 25.8 21.7 21.7 21.8 11.6 13.6 28.7 13.7 13.7										
Queue: 10 0 7 0 0 0 0 0 0 11 17 0 0										Queue: 8 1 2 0 1 1 1 7 21 2 6 0										

Table J7-3 (Continued)

A-AM.CMD		Tue Nov 5, 1996 13:15:11		Page 14-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 15-1	
Maximum Marine/Maximum Rail Alternative		Maximum Marine/Maximum Rail Alternative			
AM Peak Hour		AM Peak Hour			
Level Of Service Computation Report		Level Of Service Computation Report			
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)			
Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp.					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.819		
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	23.6		
Optimal Cycle:	82	Level Of Service:	C		
Approach: North Bound South Bound East Bound West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Split Phase	Split Phase	
Rights:	Ovl	Include	Include	Include	
Min. Green:	10 20 20 10 20 20 10 10 20 20				
Lanes:	1 0 1 1 0 1 0 1 1 0 1 0 1 0 0 1 1				
Volume Module:					
Base Vol:	0 0 72 109 165 256 51 0 0 169 364				
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
Initial Bse:	0 0 72 109 165 256 51 0 0 169 364				
Added Vol:	195 150 433 0 203 0 0 0 264 554 0 0				
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0				
Initial Fut:	195 150 433 72 312 165 256 51 264 554 169 364				
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
PHF Volume:	195 150 433 72 312 165 256 51 264 554 169 182				
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0				
Reduced Vol:	195 150 433 72 312 165 256 51 264 554 169 182				
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
Final Vol.:	195 150 433 72 327 173 282 56 290 554 177 191				
Saturation Flow Module:					
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900				
Adjustment:	0.95 1.00 0.85 0.95 0.95 0.91 0.91 0.91 0.95 0.92 0.92				
Lanes:	1.00 1.00 1.00 1.00 1.31 0.69 1.67 0.33 1.00 1.00 0.96 1.04				
Final Sat.:	1805 1900 1615 1805 2361 1249 2890 574 1732 1805 1682 1815				
Capacity Analysis Module:					
Vol/Sat:	0.11 0.08 0.27 0.04 0.14 0.14 0.10 0.10 0.17 0.31 0.11 0.11				
Crit Moves:	****				
Green/Cycle:	0.12 0.22 0.58 0.10 0.20 0.20 0.20 0.20 0.20 0.36 0.36				
Volume/Cap:	0.86 0.35 0.46 0.40 0.69 0.69 0.49 0.49 0.84 0.86 0.30 0.30				
Level Of Service Module:					
Delay/Veh:	46.7 21.1 8.0 28.0 26.0 26.0 23.2 23.2 30.6 27.7 15.1 15.1				
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
AdjDel/Veh:	46.7 21.1 8.0 28.0 26.0 26.0 23.2 23.2 30.6 27.7 15.1 15.1				
Queue:	7 4 7 2 9 5 7 1 9 16 4 4				

A-AM.CMD		Tue Nov 5, 1996 13:15:11		Page 15-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 15-1	
Maximum Marine/Maximum Rail Alternative		Maximum Marine/Maximum Rail Alternative			
AM Peak Hour		AM Peak Hour			
Level Of Service Computation Report		Level Of Service Computation Report			
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)			
Intersection #14 Union St./ 5th St./ I-880 North Ramps					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.392		
Loss Time (sec):	11 (Y+R = 4 sec)	Average Delay (sec/veh):	17.6		
Optimal Cycle:	71	Level Of Service:	C		
Approach: North Bound South Bound East Bound West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Split Phase	Split Phase	
Rights:	Include	Include	Include	Include	
Min. Green:	0 20 20 0 20 20 10 20 20 10 20 20				
Lanes:	0 0 1 1 1 0 0 1 1 0 0 1 0 1 0 1 0 1 1 0 1 0 1 1				

Table J7-3 (Continued)

A-AM.CMD		Tue Nov 5, 1996 13:15:11		Page 16-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 17-1	
Maximum Marine/Maximum Rail Alternative		Maximum Marine/Maximum Rail Alternative		AM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #15 7th St. / I-880 NB Ramps / Frontage Rd.		Intersection #16 7th St. / I-880 SB Ramps		Intersection #16 7th St. / I-880 SB Ramps	
Cycle (sec): 100		Cycle (sec): 100		Cycle (sec): 100	
Loss Time (sec): 10 (Y+R = 4 sec)		Loss Time (sec): 5 (Y+R = 4 sec)		Loss Time (sec): 5 (Y+R = 4 sec)	
Optimal Cycle: 70		Optimal Cycle: 35		Optimal Cycle: 35	
Level Of Service: C		Level Of Service: A		Level Of Service: A	
Approach: North Bound		Approach: North Bound		Approach: North Bound	
Movement: L - T - R		Movement: L - T - R		Movement: L - T - R	
Control: Protected		Control: Protected		Control: Protected	
Rights: Include		Rights: Include		Rights: Include	
Min. Green: 10 20 20		Min. Green: 0 0 0 0		Min. Green: 0 0 0 0	
Lanes: 2 0 0 1 0		Lanes: 0 0 0 0 0		Lanes: 0 0 0 0 0	
Volume Module:		Volume Module:		Volume Module:	
Base Vol:		Base Vol:		Base Vol:	
Growth Adj:		Growth Adj:		Growth Adj:	
Initial Bse:		Initial Bse:		Initial Bse:	
Added Vol:		Added Vol:		Added Vol:	
PasserByVol:		PasserByVol:		PasserByVol:	
Initial Fut:		Initial Fut:		Initial Fut:	
User Adj:		User Adj:		User Adj:	
PHF Adj:		PHF Adj:		PHF Adj:	
PHF Volume:		PHF Volume:		PHF Volume:	
Reduced Vol:		Reduced Vol:		Reduced Vol:	
Reduced Vol:		Reduced Vol:		Reduced Vol:	
PCE Adj:		PCE Adj:		PCE Adj:	
MLF Adj:		MLF Adj:		MLF Adj:	
Final Vol:		Final Vol:		Final Vol:	
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:		Sat/Lane:		Sat/Lane:	
Adjustment:		Adjustment:		Adjustment:	
Lanes:		Lanes:		Lanes:	
Final Sat:		Final Sat:		Final Sat:	
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:		Vol/Sat:		Vol/Sat:	
Crit Moves:		Crit Moves:		Crit Moves:	
Green/Cycle:		Green/Cycle:		Green/Cycle:	
Volume/Cap:		Volume/Cap:		Volume/Cap:	
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh:		Delay/Veh:		Delay/Veh:	
User DelAdj:		User DelAdj:		User DelAdj:	
AdjDel/Veh:		AdjDel/Veh:		AdjDel/Veh:	
Queue:		Queue:		Queue:	

Table J7-3 (Continued)

A-AM.CMD		Tue Nov 5, 1996 13:15:11		Page 18-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 19-1	
Maximum Marine/Maximum Rail Alternative		Maximum Marine/Maximum Rail Alternative		AM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Unsignalized Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #17 14th St./ I-880 Frontage Rd.		Intersection #18 W.Grand Ave./ I-880 Frontage Rd.		Intersection #18 W.Grand Ave./ I-880 Frontage Rd.	
Average Delay (sec/veh): 3.0 Worst Case Level Of Service: C		Cycle (sec): 100 Critical Vol./Cap. (X): 0.457		Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): 21.3	
Approach: North Bound South Bound East Bound West Bound		Optimal Cycle: 81 Level Of Service: C		Approach: North Bound South Bound East Bound West Bound	
Movement: L - T - R L - T - R L - T - R L - T - R		Control: Split Phase Split Phase Split Phase Split Phase		Movement: L - T - R L - T - R L - T - R L - T - R	
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign		Rights: Include Include Include Include		Control: Split Phase Split Phase Split Phase Split Phase	
Lanes: 0 0 1 1 0 1 0 2 0 0 0 0 0 0 0 0 1 0 0 0 1		Min. Green: 10 20 20 10 20 20 10 20 20 10 20 20		Lanes: 1 0 1 1 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 1	
Volume Module:		Volume Module:		Volume Module:	
Base Vol: 0 0 89 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Base Vol: 9 0 0 678 48 6 65 234 12 0 152 449		Base Vol: 9 0 0 678 48 6 65 234 12 0 152 449	
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse: 0 0 89 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Initial Bse: 9 0 0 678 48 6 65 234 12 0 152 449		Initial Bse: 9 0 0 678 48 6 65 234 12 0 152 449	
PasserByVol: 0		PasserByVol: 0		PasserByVol: 0	
Initial Fut: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Initial Fut: 9 164 149 678 243 6 65 299 12 159 234 449		Initial Fut: 9 164 149 678 243 6 65 299 12 159 234 449	
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume: 0 0 89 30 354 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		PHF Volume: 9 164 149 678 243 6 65 299 12 159 234 449		PHF Volume: 9 164 149 678 243 6 65 299 12 159 234 449	
Reduced Vol: 0		Reduced Vol: 0		Reduced Vol: 0	
Final Vol: 0 0 89 30 354 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Final Vol: 9 164 149 678 243 6 65 299 12 159 234 449		Final Vol: 9 164 149 678 243 6 65 299 12 159 234 449	
Adjusted Volume Module:		Adjusted Volume Module:		Adjusted Volume Module:	
Grade: 0%		Grade: 0%		Grade: 0%	
% Cycle/Cars: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		% Cycle/Cars: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		% Cycle/Cars: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx	
% Truck/Comb: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		% Truck/Comb: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		% Truck/Comb: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx	
PCE Adj: 1.10 1.00 1.00 1.10 1.00 1.00 1.10 1.10 1.10 1.10 1.10 1.10		PCE Adj: 1.10 1.00 1.00 1.10 1.00 1.00 1.10 1.10 1.10 1.10 1.10 1.10		PCE Adj: 1.10 1.00 1.00 1.10 1.00 1.00 1.10 1.10 1.10 1.10 1.10 1.10	
Cycl/Car PCE: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Cycl/Car PCE: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Cycl/Car PCE: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx	
Trck/Cmb PCE: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Trck/Cmb PCE: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Trck/Cmb PCE: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx	
Adj Vol: 0 313 89 33 354 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Adj Vol: 0 313 89 33 354 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Adj Vol: 0 313 89 33 354 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Critical Gap Module:		Critical Gap Module:		Critical Gap Module:	
MoveUp Time:xxxxx xxxx xxxxx 2.1 xxxxx xxxxx xxxxx xxxxx 3.4 xxxxx 2.6		MoveUp Time:xxxxx xxxx xxxxx 2.1 xxxxx xxxxx xxxxx xxxxx 3.4 xxxxx 2.6		MoveUp Time:xxxxx xxxx xxxxx 2.1 xxxxx xxxxx xxxxx xxxxx 3.4 xxxxx 2.6	
Critical Gp:xxxxx xxxx xxxxx 5.5 xxxxx xxxxx xxxxx xxxxx 7.0 xxxxx 5.5		Critical Gp:xxxxx xxxx xxxxx 5.5 xxxxx xxxxx xxxxx xxxxx 7.0 xxxxx 5.5		Critical Gp:xxxxx xxxx xxxxx 5.5 xxxxx xxxxx xxxxx xxxxx 7.0 xxxxx 5.5	
Capacity Module:		Capacity Module:		Capacity Module:	
Conflict Vol: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Conflict Vol: 402 xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Conflict Vol: 402 xxxx xxxx xxxx xxxx xxxx xxxx xxxx	
Potent Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Potent Cap.: 1043 xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Potent Cap.: 1043 xxxx xxxx xxxx xxxx xxxx xxxx xxxx	
Adj Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Adj Cap: 1.00 xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Adj Cap: 1.00 xxxx xxxx xxxx xxxx xxxx xxxx xxxx	
Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Move Cap.: 1043 xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Move Cap.: 1043 xxxx xxxx xxxx xxxx xxxx xxxx xxxx	
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Stopped Del:xxxxx xxxx xxxxx 3.6 xxxxx xxxxx xxxxx xxxxx 17.6 xxxxx 3.3		Stopped Del:xxxxx xxxx xxxxx 3.6 xxxxx xxxxx xxxxx xxxxx 17.6 xxxxx 3.3		Stopped Del:xxxxx xxxx xxxxx 3.6 xxxxx xxxxx xxxxx xxxxx 17.6 xxxxx 3.3	
LOS by Move: * * * * * A * * * * * C * * * * *		LOS by Move: * * * * * A * * * * * C * * * * *		LOS by Move: * * * * * A * * * * * C * * * * *	
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT		Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT		Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT	
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx		Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx		Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx	
Shrd StpDel:xxxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx		Shrd StpDel:xxxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx		Shrd StpDel:xxxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx	
Shared LOS: *		Shared LOS: *		Shared LOS: *	
ApproachDel: 0.0 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		ApproachDel: 0.0 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		ApproachDel: 0.0 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	

Table J.7-4

A-PM.CMD		Tue Nov 5, 1996 10:49:50				Page 1-1			
		FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour							
Trip Generation Report									
Forecast for PM Peak Hour									
Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total % Of Trips Total	

1	New Harbor	1018.00	Employees	0.06	0.22	61	224	285	5.2
	Zone 1 Subtotal					61	224	285	5.2
3	J.I.T.	360.00	Employees	0.10	0.36	36	130	166	3.0
	Zone 3 Subtotal					36	130	166	3.0
6	Middle Harbr	516.00	Employees	0.06	0.22	31	114	145	2.7
	Zone 6 Subtotal					31	114	145	2.7
7	7th St Harbr	613.00	Employees	0.06	0.22	37	135	172	3.1
	Zone 7 Subtotal					37	135	172	3.1
8	Outer Harbor	706.00	Employees	0.06	0.21	42	148	190	3.5
	Zone 8 Subtotal					42	148	190	3.5
10	New Park	1.00	Total Trips	33.00	40.00	33	40	73	1.3
	Zone 10 Subtotal					33	40	73	1.3
11	New Harbor	1.00	Trucks Inter	203.00	243.00	203	243	446	8.2
	Zone 11 Subtotal					203	243	446	8.2
16	Middle Harbr	1.00	Trucks Inter	103.00	123.00	103	123	226	4.1
	Zone 16 Subtotal					103	123	226	4.1
17	7th St Harbr	1.00	Trucks Inter	122.00	147.00	122	147	269	4.9
	Zone 17 Subtotal					122	147	269	4.9
18	Outer Harbor	1.00	Trucks Inter	141.00	169.00	141	169	310	5.7
	Zone 18 Subtotal					141	169	310	5.7
21	New Harbor	1.00	Truck External	391.00	468.00	391	468	859	15.7
	Zone 21 Subtotal					391	468	859	15.7
23	J.I.T.	1.00	Truck External	353.00	423.00	353	423	776	14.2
	Zone 23 Subtotal					353	423	776	14.2
26	Middle Harbr	1.00	Truck External	198.00	237.00	198	237	435	8.0
	Zone 26 Subtotal					198	237	435	8.0
27	7th St Harbr	1.00	Truck External	235.00	282.00	235	282	517	9.5
	Zone 27 Subtotal					235	282	517	9.5
28	Outer Harbor	1.00	Truck External	271.00	325.00	271	325	596	10.9

TOTAL						2257	3208	5465	100.0

		Zone 28 Subtotal				271	325	596	10.9

Zone		Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total % Of Trips Total

A-PM.CMD		Tue Nov 5, 1996 10:49:50				Page 1-2			
		FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Maximum Rail Alternative PM Peak Hour							

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J.7-41

Table J.7-4 (Continued)

A-PM.CMD		Tue Nov 5, 1996 10:49:50				Page 3-4				A-PM.CMD		Tue Nov 5, 1996 10:49:51				Page 3-5							
		FISCO/Port Vision 2000 EIS/EIR										FISCO/Port Vision 2000 EIS/EIR											
		Maximum Marine/Maximum Rail Alternative										Maximum Marine/Maximum Rail Alternative											
		PM Peak Hour										PM Peak Hour											
Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total						
Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right						
#204						#244						#244											
Base	0	0	-375	-668	0	0	0	0	0	0	0	Base	0	0	0	-302	-226	-44	0	-37	0	-609	
Added	0	0	413	781	0	0	0	0	0	0	0	Added	0	0	0	0	0	0	0	0	0	0	
Total	0	0	38	113	0	0	0	0	0	0	0	Total	0	0	0	0	-302	-226	-44	0	-37	0	-609
#207																							
Base	0	-463	0	0	0	0	0	0	0	0	-278	-741											
Added	0	525	0	0	0	0	0	0	0	0	308	833											
Total	0	62	0	0	0	0	0	0	0	0	30	92											
#214																							
Base	0	0	0	0	0	0	0	0	0	-350	-391	0	-741										
Added	0	0	0	0	0	0	0	0	0	348	485	0	833										
Total	0	0	0	0	0	0	0	0	0	-2	94	0	92										
#217																							
Base	0	0	0	-19	0	0	-47	0	0	0	0	0	-66										
Added	0	0	0	9	0	0	67	0	0	0	0	0	75										
Total	0	0	0	-10	0	0	20	0	0	0	0	0	9										
#218																							
Base	0	-39	0	0	0	-31	-16	0	0	0	0	0	-86										
Added	0	22	0	0	0	51	16	0	0	0	0	0	89										
Total	0	-17	0	0	0	20	0	0	0	0	0	0	3										
#219																							
Base	0	-70	0	0	0	0	0	0	0	0	-5	0	-75										
Added	0	72	0	0	0	0	0	0	0	0	5	0	77										
Total	0	2	0	0	0	0	0	0	0	0	-0	0	2										
#220																							
Base	0	0	0	-19	-18	0	0	0	0	0	-5	0	-42										
Added	0	0	0	9	31	0	0	0	0	0	5	0	44										
Total	0	0	0	-10	13	0	0	0	0	0	-0	0	2										
#225																							
Base	0	0	0	0	0	0	0	0	0	0	-278	-5	-283										
Added	0	0	0	0	0	0	0	0	0	0	308	5	312										
Total	0	0	0	0	0	0	0	0	0	0	30	-0	29										
#226																							
Base	0	0	-16	0	0	0	-375	0	0	0	0	0	-391										
Added	0	0	16	0	0	0	413	0	0	0	0	0	430										
Total	0	0	0	0	0	0	38	0	0	0	0	0	39										

Table J.7-4 (Continued)

A-PM.CMD		Tue Nov 5, 1996 10:49:51										Page 4-1		Page 4-2	
FISCO/Port Vision 2000 EIS/EIR															
Maximum Marine/Maximum Rail Alternative															
PM Peak Hour															
Link Volume Report															
PM Peak Hour															
Volume		NB Link		SB Link		EB Link		WB Link		Total		Total			
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	Volume		
#13 Adeline St./ 5th St./ I-880 SB Ramp															
Base	0	0	0	310	754	1064	295	271	566	818	398	1216	2846		
Added	955	628	1583	122	189	310	158	246	404	348	520	868	3166		
Total	955	628	1583	432	943	1374	453	517	970	1166	918	2084	6012		
#14 Union St./ 5th St./ I-880 North Ramps															
Base	475	194	669	174	259	433	146	61	207	97	378	475	1784		
Added	158	246	404	0	0	0	0	0	0	246	158	404	809		
Total	633	440	1073	174	259	433	146	61	207	343	536	879	2593		
#15 7th St./ I-880 NB Ramps / Frontage Rd.															
Base	200	0	200	207	198	405	108	258	366	54	113	167	1138		
Added	485	0	485	268	365	633	383	758	1141	5	18	23	2283		
Total	685	0	685	475	563	1038	491	1016	1507	59	131	190	3421		
#16 7th St./ I-880 SB Ramps															
Base	0	385	385	0	0	0	7	0	7	378	0	378	770		
Added	0	674	674	0	0	0	1057	758	1815	758	383	1141	3630		
Total	0	1059	1059	0	0	0	1064	758	1822	1136	383	1519	4400		
#17 14th St./ I-880 Frontage Rd.															
Base	192	115	307	4	69	73	0	0	0	122	134	256	636		
Added	365	268	633	268	365	633	0	0	0	0	0	0	1266		
Total	557	383	940	272	434	706	0	0	0	122	134	256	1902		
#18 W.Grand Ave./ I-880 Frontage Rd.															
Base	147	3	150	765	488	1253	366	537	903	786	1036	1822	4128		
Added	365	268	633	130	186	316	76	52	128	190	255	445	1522		
Total	512	271	783	895	674	1569	442	589	1031	976	1291	2267	5650		
#134															
Base	0	0	0	0	0	0	0	0	0	0	0	0	0		
Added	569	682	1251	0	0	0	553	389	942	1071	1122	2193	4386		
Total	569	682	1251	0	0	0	553	389	942	1071	1122	2193	4386		
#138															
Base	-168	-123	-291	-147	-188	-335	-20	-24	-44	0	0	0	-670		
Added	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	-168	-123	-291	-147	-188	-335	-20	-24	-44	0	0	0	-670		
#158															
Base	-422	0	-422	0	-259	-259	0	0	0	0	-163	-163	-844		
Added	486	0	486	0	329	329	0	0	0	0	157	157	972		
Total	64	0	64	0	70	70	0	0	0	0	-6	-6	128		

Table J.7-4 (Continued)

A-PM.CMD				Tue Nov 5, 1996 10:49:51				A-PM.CMD				Tue Nov 5, 1996 10:49:51				Page 4-4			
				Page 4-3															
				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR							
				Maximum Marine/Maximum Rail Alternative				Maximum Marine/Maximum Rail Alternative				Maximum Marine/Maximum Rail Alternative							
				PM Peak Hour				PM Peak Hour				PM Peak Hour							
Volume	NB Link	SB Link	EB Link	WB Link	Total					Volume	NB Link	SB Link	EB Link	WB Link	Total				
Type	In	Out	Total	In	Out	Total	In	Out	Total	Type	In	Out	Total	In	Out	Total	In	Out	Total
#159																			
Base	-259	0	-259	0	0	0	0	-364	-364	-105	0	-105	0	-105	0	-105	0	-105	-728
Added	329	0	329	0	0	0	0	426	426	97	0	97	0	97	0	97	0	97	851
Total	70	0	70	0	0	0	0	62	62	-8	0	-8	0	-8	0	-8	0	-8	123
#160																			
Base	0	-105	-105	0	0	0	0	-259	-259	-364	0	-364	0	-364	0	-364	0	-364	-728
Added	0	97	97	0	0	0	0	329	329	426	0	426	0	426	0	426	0	426	851
Total	0	-8	-8	0	0	0	0	70	70	62	0	62	0	62	0	62	0	62	123
#161																			
Base	0	-255	-255	-105	0	-105	-150	0	-150	0	0	0	0	0	0	0	0	0	-510
Added	0	275	275	97	0	97	178	0	178	0	0	0	0	0	0	0	0	0	549
Total	0	20	20	-8	0	-8	28	0	28	0	0	0	0	0	0	0	0	0	39
#165																			
Base	0	-660	-660	-126	0	-126	-534	0	-534	0	0	0	0	0	0	0	0	0	-1320
Added	0	832	832	158	0	158	674	0	674	0	0	0	0	0	0	0	0	0	1664
Total	0	172	172	32	0	32	140	0	140	0	0	0	0	0	0	0	0	0	344
#170																			
Base	-596	0	-596	0	-205	-205	0	0	0	0	-391	-391	-1192	0	-1192	0	-1192	0	-1320
Added	731	0	731	0	246	246	0	0	0	0	485	485	1462	0	1462	0	1462	0	1664
Total	135	0	135	0	41	41	0	0	0	0	94	94	270	0	270	0	270	0	344
#177																			
Base	0	-214	-214	-214	0	-214	-163	0	-163	0	-163	-163	-754	0	-754	0	-754	0	-1320
Added	0	263	263	263	0	263	157	0	157	0	157	157	841	0	841	0	841	0	1664
Total	0	49	49	49	0	49	-6	0	-6	0	-6	-6	87	0	87	0	87	0	344
#178																			
Base	-323	0	-323	0	-439	-439	-163	0	-163	0	-47	-47	-972	0	-972	0	-972	0	-1320
Added	385	0	385	0	475	475	157	0	157	0	67	67	1083	0	1083	0	1083	0	1664
Total	62	0	62	0	36	36	-6	0	-6	0	20	20	111	0	111	0	111	0	344
#182																			
Base	-439	0	-439	-297	-439	-736	0	-297	-297	0	0	0	-1472	0	-1472	0	-1472	0	-1320
Added	475	0	475	325	475	799	0	325	325	0	0	0	1599	0	1599	0	1599	0	1664
Total	36	0	36	28	36	63	0	28	28	0	0	0	127	0	127	0	127	0	344
#201																			
Base	0	0	0	0	0	0	-1043	0	-1043	0	-1043	-1043	-208	0	-208	0	-208	0	-1320
Added	0	0	0	0	0	0	1194	0	1194	0	1194	1194	2388	0	2388	0	2388	0	1664
Total	0	0	0	0	0	0	151	0	151	0	151	151	302	0	302	0	302	0	344

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FISCO/Port Vision 2000 EIS/EIR
Maximum Marine/Maximum Rail Alternative
PM Peak Hour

Volume Type	NB Link		SB Link		EB Link		WB Link		Total Volume			
	In	Out	Total	In	Out	Total	In	Out		Total		
#244												
base	0	0	-302	-226	-528	-270	-339	-609	-37	-44	-81	-1218
Added	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	-302	-226	-528	-270	-339	-609	-37	-44	-81	-1218

A-PM.CMD Tue Nov 5, 1996 10:49:51 Page 4-5 A-PM.CMD

FISCO/Port Vision 2000 EIS/EIR

Maximum Marine/Maximum Rail Alternative

PM Peak Hour

Impact Analysis Report Level Of Service						
#	Intersection	Base		Future		Change in
		LOS	Del/ Veh C	LOS	Del/ Veh C	
# 3	Maritime St./ Burma St.	B	7.2 0.211	B	9.5 0.317	+ 2.293 D/V
# 4	Maritime St./ 14th St.	C	15.9 0.392	C	19.9 0.762	+ 3.975 D/V
# 5	Maritime St./ 7th St. Extension	B	5.8 0.080	B	13.7 0.677	+ 7.904 D/V
# 6	7th St./ 7th St. Extension	C	20.9 0.000	B	14.4 0.632	-6.444 D/V
# 8	Adeline St./ 3rd St.	C	20.4 0.084	F	64.3 0.656	+43.947 D/V
# 9	7th/Middle Harbor Rd	C	15.8 0.000	C	16.4 0.571	+ 0.612 D/V
# 10	New Harbor/Mid Harbor Rd		0.0 0.000	C	15.2 0.621	+15.243 D/V
# 12	Maritime St./ W.Grand Ave./ I-	B	12.4 0.237	C	18.8 0.411	+ 6.400 D/V
# 13	Adeline St./ 5th St./ I-880 SB	C	17.6 0.328	D	29.7 0.504	+12.076 D/V
# 14	Union St./ 5th St./ I-880 North	B	12.5 0.178	C	16.8 0.226	+ 4.303 D/V
# 15	7th St./ I-880 NB Ramps / Frontage	B	11.5 0.135	C	18.2 0.397	+ 6.724 D/V
# 16	7th St./ I-880 SB Ramps	A	2.6 0.113	B	5.7 0.557	+ 3.122 D/V
# 17	14th St./ I-880 Frontage Rd.	A	1.9 0.000	C	2.1 0.000	+ 0.000 V/C
# 18	W.Grand Ave./ I-880 Frontage Road	C	21.1 0.505	C	22.1 0.639	+ 0.988 D/V

Table J.7-4 (Continued)

A-PM.CMD		Tue Nov 5, 1996 10:49:51										Page 6-1		
		FISCO/Port Vision 2000 EIS/EIR												
		Maximum Marine/Maximum Rail Alternative												
		PM Peak Hour												
		Level Of Service Computation Report												
		1994 HCM Operations Method (Future Volume Alternative)												
		Intersection #3 Maritime St./ Burma St.												
Cycle (sec):	100	Critical Vol./Cap. (X):									0.317			
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):									9.5			
Optimal Cycle:	58	Level Of Service:									B			
Approach:	North Bound	South Bound	East Bound	West Bound										
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	10	20	10	20	20	10	20	20	10	20	20	10	20	20
Lanes:	1	0	1	0	1	0	1	0	1	0	0	0	0	0
Volume Module:														
Base Vol:	5	590	0	0	109	0	0	0	50	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	590	0	0	109	0	0	0	50	0	0	0	0	0
Added Vol:	0	354	0	0	210	92	160	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	944	0	0	319	92	160	0	50	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	944	0	0	319	92	160	0	50	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	944	0	0	319	92	160	0	50	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol:	5	992	0	0	335	96	160	0	50	0	0	0	0	0
Saturation Flow Module:														
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.97	0.97	0.95	1.00	0.85	1.00	1.00	1.00	1.00	0.85	0.85
Lanes:	1.00	2.00	0.00	1.00	1.55	0.45	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00
Final Sat:	1805	3800	0	1900	2865	821	1805	0	1615	0	0	0	1615	1615
Capacity Analysis Module:														
Vol/Sat:	0.00	0.26	0.00	0.00	0.12	0.12	0.09	0.00	0.03	0.00	0.00	0.00	0.18	0.18
Crit Moves:	0.24	0.62	0.00	0.00	0.48	0.48	0.20	0.00	0.20	0.00	0.00	0.00	0.52	0.52
Green/Cycle:	0.01	0.42	0.00	0.00	0.24	0.24	0.44	0.00	0.15	0.00	0.00	0.00	0.23	0.23
Volume/Cap:	0.01	0.42	0.00	0.00	0.24	0.24	0.44	0.00	0.15	0.00	0.00	0.00	0.23	0.23
Level Of Service Module:														
Delay/Veh:	18.7	6.4	0.0	0.0	9.9	9.9	23.3	0.0	21.4	0.0	0.0	0.0	8.3	8.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.7	6.4	0.0	0.0	9.9	9.9	23.3	0.0	21.4	0.0	0.0	0.0	8.3	8.3
Queue:	0	14	0	0	5	2	4	0	1	0	0	0	1	1

A-PM.CMD		Tue Nov 5, 1996 10:49:51										Page 7-1		
		FISCO/Port Vision 2000 EIS/EIR												
		Maximum Marine/Maximum Rail Alternative												
		PM Peak Hour												
		Level Of Service Computation Report												
		1994 HCM Operations Method (Future Volume Alternative)												
		Intersection #4 Maritime St./ 14th St.												
Cycle (sec):	100	Critical Vol./Cap. (X):									0.762			
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):									19.9			
Optimal Cycle:	58	Level Of Service:									C			
Approach:	North Bound	South Bound	East Bound	West Bound										
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	10	20	20	10	20	20	10	20	20	10	20	20	10	20
Lanes:	1	0	1	0	1	0	1	0	0	0	1	0	0	1
Volume Module:														
Base Vol:	0	414	28	105	132	0	0	0	0	0	92	0	290	290
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	414	28	105	132	0	0	0	0	0	92	0	290	290
Added Vol:	295	255	0	0	142	68	100	0	382	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	295	669	28	105	274	68	100	0	382	92	0	290	290	290
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	295	669	28	105	274	68	100	0	382	92	0	290	290	290
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	295	669	28	105	274	68	100	0	382	92	0	290	290	290
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.05	1.05	1.00	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol:	295	702	29	105	288	71	100	0	382	92	0	290	290	290
Saturation Flow Module:														
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.99	0.99	0.95	0.97	0.97	0.58	1.00	0.58	0.40	1.00	0.85	0.40	0.85
Lanes:	1.00	1.92	0.08	1.00	1.60	0.40	0.21	0.00	0.79	1.00	0.00	1.00	0.40	0.85
Final Sat:	1805	3613	149	1805	2957	729	227	0	868	760	0	1615	760	1615
Capacity Analysis Module:														
Vol/Sat:	0.16	0.19	0.19	0.06	0.10	0.10	0.44	0.00	0.44	0.12	0.00	0.18	0.12	0.18
Crit Moves:	0.20	0.26	0.26	0.13	0.20	0.20	0.52	0.00	0.72	0.52	0.00	0.52	0.52	0.52
Green/Cycle:	0.84	0.74	0.74	0.44	0.49	0.49	0.84	0.00	0.61	0.23	0.00	0.34	0.23	0.34
Volume/Cap:	0.84	0.74	0.74	0.44	0.49	0.49	0.84	0.00	0.61	0.23	0.00	0.34	0.23	0.34
Level Of Service Module:														
Delay/Veh:	36.1	23.8	23.8	26.7	23.3	23.3	20.4	0.0	5.5	8.3	0.0	9.0	8.3	9.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.1	23.8	23.8	26.7	23.3	23.3	20.4	0.0	5.5	8.3	0.0	9.0	8.3	9.0
Queue:	9	19	1	3	7	2	3	0	6	1	0	5	1	5

Table J.7-4 (Continued)

A-PM.CMD		Tue Nov 5, 1996 10:49:51		Page 8-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 9-1	
Maximum Marine/Maximum Rail Alternative		Maximum Marine/Maximum Rail Alternative		PM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		PM Peak Hour	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		PM Peak Hour	
Intersection #5 Maritime St./ 7th St. Extension		Intersection #6 7th St./ 7th St. Extension		PM Peak Hour	
Cycle (sec): 100		Cycle (sec): 100		Critical Vol./Cap. (X): 0.632	
Loss Time (sec): 8 (Y+R = 4 sec)		Loss Time (sec): 8 (Y+R = 4 sec)		Average Delay (sec/veh): 14.4	
Optimal Cycle: 48		Optimal Cycle: 58		Level Of Service: B	
Approach: North Bound		Approach: North Bound		East Bound	
Movement: L - T - R		Movement: L - T - R		West Bound	
Control: Protected		Control: Protected		Protected	
Rights: Include		Rights: Include		Protected	
Min. Green: 10 20 0 0 20 20 10 0 20 0 0 0		Min. Green: 0 0 0 0 10 0 20 10 20 20 0 20		Ovl	
Lanes: 2 0 2 0 0 0 2 0 1 2 0 0 1		Lanes: 0 0 0 0 2 0 0 1 2 0 2 0 0 0 1 1 1		Protected	
Volume Module:		Volume Module:		Protected	
Base Vol:		Base Vol:		Include	
Growth Adj:		Growth Adj:		0 0 0 0 0 0 0 0 0 0 0 0 0	
Initial Bse:		Initial Bse:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Added Vol:		Added Vol:		0 0 0 0 31 0 0 0 0 0 0 0 0	
PasserByVol:		PasserByVol:		0 0 0 0 683 0 418 562 373 0 0 265 494	
Initial Fut:		Initial Fut:		0 0 0 0 714 0 418 562 373 0 0 265 494	
User Adj:		User Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:		PHF Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:		PHF Volume:		0 0 0 0 714 0 418 562 373 0 0 265 494	
Reduced Vol:		Reduced Vol:		0 0 0 0 0 0 0 0 0 0 0 0 0	
PCE Adj:		PCE Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:		MLF Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Final Vol:		Final Vol:		0 0 0 0 736 0 418 579 392 0 0 291 543	
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:		Sat/Lane:		Sat/Lane:	
Adjustment:		Adjustment:		Adjustment:	
Lanes:		Lanes:		Lanes:	
Final Sat:		Final Sat:		Final Sat:	
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:		Vol/Sat:		Vol/Sat:	
Crit Moves:		Crit Moves:		Crit Moves:	
Green/Cycle:		Green/Cycle:		Green/Cycle:	
Volume/Cap:		Volume/Cap:		Volume/Cap:	
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh:		Delay/Veh:		Delay/Veh:	
User DelAdj:		User DelAdj:		User DelAdj:	
AdjDel/Veh:		AdjDel/Veh:		AdjDel/Veh:	
Queue:		Queue:		Queue:	

Table J.7-4 (Continued)

A-PM.CMD		Tue Nov 5, 1996 10:49:51		Page 10-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 11-1	
Maximum Marine/Maximum Rail Alternative		Maximum Marine/Maximum Rail Alternative		PM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #8 Adeline St./ 3rd St.		Intersection #9 7th/Middle Harbor Rd.		Intersection #9 7th/Middle Harbor Rd.	
Cycle (sec):	100	Cycle (sec):	100	Cycle (sec):	100
Loss Time (sec):	12 (Y+R = 4 sec)	Loss Time (sec):	8 (Y+R = 4 sec)	Loss Time (sec):	8 (Y+R = 4 sec)
Optimal Cycle:	92	Optimal Cycle:	58	Optimal Cycle:	58
Level Of Service: F		Level Of Service: C		Level Of Service: C	
Approach:	North Bound	Approach:	North Bound	Approach:	North Bound
Movement:	L - T - R	Movement:	L - T - R	Movement:	L - T - R
Control:	Split Phase	Control:	Split Phase	Control:	Split Phase
Rights:	Include	Rights:	Include	Rights:	Include
Min. Green:	10 20 20 10 20 20	Min. Green:	10 0 20 0 0 0	Min. Green:	10 0 20 0 0 0
Lanes:	0 1 0 1 0 0 1 0 1 0 1 0 1 0	Lanes:	1 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0	Lanes:	1 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0
Volume Module:		Volume Module:		Volume Module:	
Base Vol:	36 0 122 43 0 15 30 14 13 89 39 78	Base Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Base Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:	36 0 122 43 0 15 30 14 13 89 39 78	Initial Bse:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Initial Bse:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Added Vol:	0 955 0 0 628 0 0 0 0 0 0 0 0 0 0	Added Vol:	4 0 346 0 0 0 0 0 0 0 0 0 0 0 0	Added Vol:	4 0 346 0 0 0 0 0 0 0 0 0 0
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut:	36 955 122 43 628 15 30 14 13 89 39 78	Initial Fut:	4 0 346 0 0 0 0 0 0 0 0 0 0 0 0	Initial Fut:	4 0 346 0 0 0 0 0 0 0 0 0 0
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:	36 955 122 43 628 15 30 14 13 89 39 78	PHF Volume:	4 0 346 0 0 0 0 0 0 0 0 0 0 0 0	PHF Volume:	4 0 346 0 0 0 0 0 0 0 0 0 0
Reduc Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Reduc Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Reduc Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol:	36 955 122 43 628 15 30 14 13 89 39 78	Reduced Vol:	4 0 346 0 0 0 0 0 0 0 0 0 0 0 0	Reduced Vol:	4 0 346 0 0 0 0 0 0 0 0 0 0
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:	1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05	MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol:	38 1003 128 45 659 16 30 14 13 89 39 78	Final Vol:	4 0 346 0 0 0 0 0 0 0 0 0 0 0 0	Final Vol:	4 0 346 0 0 0 0 0 0 0 0 0 0
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:	0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98	Adjustment:	0.95 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Adjustment:	0.95 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:	0.06 1.72 0.22 0.12 1.84 0.04 1.00 0.52 0.48 0.84 0.39 0.77 0.84 0.39 0.77	Lanes:	1.00 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Lanes:	1.00 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Final Sat:	121 3195 408 238 3478 84 1805 916 851 1512 663 1325	Final Sat:	1805 0 1615 0 0 0 0 0 0 0 0 0 0 0 0	Final Sat:	1805 0 1615 0 0 0 0 0 0 0 0 0 0 0 0
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:	0.31 0.31 0.31 0.19 0.19 0.19 0.02 0.02 0.02 0.06 0.06 0.06 0.06 0.06 0.06	Vol/Sat:	0.00 0.00 0.21 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Vol/Sat:	0.00 0.00 0.21 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Crit Moves:	0.28 0.28 0.28 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20	Crit Moves:	0.38 0.00 0.38 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Crit Moves:	0.38 0.00 0.38 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Green/Cycle:	1.12 1.12 1.12 0.95 0.95 0.95 0.08 0.08 0.08 0.29 0.29 0.29 0.29 0.29 0.29	Green/Cycle:	0.01 0.00 0.57 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Green/Cycle:	0.01 0.00 0.57 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Volume/Cap:	0.28 0.28 0.28 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20	Volume/Cap:	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Volume/Cap:	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh:	88.4 88.4 88.4 40.7 40.7 40.7 21.0 21.0 21.0 22.0 22.0 22.0 22.0 22.0	Delay/Veh:	12.6 0.0 17.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Delay/Veh:	12.6 0.0 17.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:	88.4 88.4 88.4 40.7 40.7 40.7 21.0 21.0 21.0 22.0 22.0 22.0 22.0 22.0	AdjDel/Veh:	12.6 0.0 17.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	AdjDel/Veh:	12.6 0.0 17.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Queue:	3 51 9 3 22 1 0 0 0 2 1 2 2 2	Queue:	0 0 8 0 0 0 0 0 0 0 0 0 0 0 0	Queue:	0 0 8 0 0 0 0 0 0 0 0 0 0 0 0

Table J.7-4 (Continued)

A-PM.CMD		Tue Nov 5, 1996 10:49:51		Page 14-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 15-1	
Maximum Marine/Maximum Rail Alternative		Maximum Marine/Maximum Rail Alternative			
PM Peak Hour		PM Peak Hour			
Level Of Service Computation Report					
1994 HCM Operations Method (Future Volume Alternative)					
Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.504		
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	29.7		
Optimal Cycle:	82	Level Of Service:	D		
Approach: North Bound South Bound East Bound West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Split Phase	Split Phase	Split Phase
Rights:	Ovl	Include	Include	Include	Include
Min. Green:	10 20 20	10 20 20	10 10 20	10 20 20	10 20 20
Lanes:	1 0 1 1 0	1 0 1 1 0	1 1 0 1 0	1 0 0 1 1	1 0 0 1 1
Volume Module:					
Base Vol:	0 0 241	0 69 138 157	0 0 202	616	
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Initial Bse:	0 0 241	0 69 138 157	0 0 202	616	
Added Vol:	246 189 520	0 122 0 0 158 348	0 0 0		
PasserByVol:	0 0 0 0 0 0 0 0 0				
Initial Fut:	246 189 520	241 122 69 138 157 158 348 202 616			
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Volume:	246 189 520	241 122 69 138 157 158 348 202 308			
Reduced Vol:	0 0 0 0 0 0 0 0 0				
Reduced Vol:	246 189 520	241 122 69 138 157 158 348 202 308			
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Final Vol:	246 189 520	241 128 72 152 173 174 348 212 323			
Saturation Flow Module:					
Sat/Lane:	1900 1900	1900 1900 1900 1900	1900 1900	1900 1900	
Adjustment:	0.95 1.00 0.85	0.95 0.95 0.95 0.94 0.94 0.94 0.95 0.91 0.91			
Lanes:	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.79 1.21			
Final Sat:	1805 1900 1615	1805 2310 1300 1787 1787 1787 1805 1370 2088			
Capacity Analysis Module:					
Vol/Sat:	0.14 0.10 0.32	0.13 0.06 0.06 0.09 0.10 0.10 0.19 0.15 0.15			
Crit Moves:	****	****	****	****	
Green/Cycle:	0.20 0.28 0.56	0.12 0.20 0.20 0.20 0.20 0.20 0.28 0.28 0.28			
Volume/Cap:	0.69 0.35 0.57	1.14 0.28 0.28 0.43 0.48 0.49 0.69 0.55 0.55			
Level Of Service Module:					
Delay/Veh:	27.7 18.5 9.6	134.4 21.9 21.9 22.8 23.2 23.2 23.3 20.3 20.3			
User DelAdj:	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
AdjDel/Veh:	27.7 18.5 9.6	134.4 21.9 21.9 22.8 23.2 23.2 23.3 20.3 20.3			
Queue:	7 4 10	15 3 2 4 4 4 9 5 8			

A-PM.CMD		Tue Nov 5, 1996 10:49:51		Page 15-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 15-1	
Maximum Marine/Maximum Rail Alternative		Maximum Marine/Maximum Rail Alternative			
PM Peak Hour		PM Peak Hour			
Level Of Service Computation Report					
1994 HCM Operations Method (Future Volume Alternative)					
Intersection #14 Union St./ 5th St./ I-880 North Ramps					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.226		
Loss Time (sec):	11 (Y+R = 4 sec)	Average Delay (sec/veh):	16.8		
Optimal Cycle:	71	Level Of Service:	C		
Approach: North Bound South Bound East Bound West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Split Phase	Split Phase	Split Phase
Rights:	Include	Include	Include	Include	Include
Min. Green:	0 20 20	0 20 20	10 20 20	10 20 20	10 20 20
Lanes:	0 0 1 1 1	0 0 1 1 0	0 1 0 1 0	1 0 1 1 0	1 0 1 1 0
Volume Module:					
Base Vol:	0 194	281	0 144	30	31 97 18 32 31 34
Growth Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00
Initial Bse:	0 194	281	0 144	30	31 97 18 32 31 34
Added Vol:	0 0	158	0 0	0 0 0 0	246 0 0 0 0
PasserByVol:	0 0	0 0 0 0			
Initial Fut:	0 194	439	0 144	30	31 97 18 278 31 34
User Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00
PHF Volume:	0 194	439	0 144	30	31 97 18 278 31 34
Reduced Vol:	0 0	0 0 0 0			
Reduced Vol:	0 194	439	0 144	30	31 97 18 278 31 34
PCE Adj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00
MLF Adj:	1.00 1.00	1.05	1.00 1.05	1.05 1.05 1.05	1.05 1.00 1.00 1.00 1.00
Final Vol:	0 194	461	0 151	32	33 102 19 278 31 34
Saturation Flow Module:					
Sat/Lane:	1900 1900	1900 1900	1900 1900	1900 1900	1900 1900 1900
Adjustment:	1.00 1.00	0.85	1.00 0.97	0.97 0.97 0.97	0.97 0.95 1.00 0.85
Lanes:	0.00 1.00	2.00	0.00 1.65	0.35 0.43 1.32	0.25 1.00 1.00 1.00
Final Sat:	0 1900	3230	0 3041	645	790 2442 455 1805 1900 1615
Capacity Analysis Module:					
Vol/Sat:	0.00 0.10	0.14	0.00 0.05	0.05 0.04 0.04	0.04 0.15 0.02 0.02
Crit Moves:	****	****	****	****	****
Green/Cycle:	0.00 0.33	0.33	0.00 0.33	0.33 0.20 0.20	0.20 0.36 0.36 0.36
Volume/Cap:	0.00 0.31	0.43	0.00 0.15	0.15 0.21 0.21	0.21 0.43 0.05 0.06
Level Of Service Module:					
Delay/Veh:	0 0	16.1	16.9	0 0	15.2 21.6 21.6 21.6 16.0 13.5 13.6
User DelAdj:	1.00 1.00	1.00	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:	0 0	16.1	16.9	0 0	15.2 21.6 21.6 21.6 16.0 13.5 13.6
Queue:	0 4	10	0 3	1 1	2 0 6 1 1

Table J.7-4 (Continued)

A-PM.CMD		Tue Nov 5, 1996 10:49:51		Page 16-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 17-1	
Maximum Marine/Maximum Rail Alternative		Maximum Marine/Maximum Rail Alternative		PM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		PM Peak Hour	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		PM Peak Hour	
Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.		Intersection #16 7th St./ I-880 SB Ramps		PM Peak Hour	
Cycle (sec): 100		Cycle (sec): 100		Critical Vol./Cap. (X): 0.397	
Loss Time (sec): 10 (Y+R = 4 sec)		Loss Time (sec): 5 (Y+R = 4 sec)		Average Delay (sec/veh): 18.2	
Optimal Cycle: 70		Optimal Cycle: 35		Level Of Service: C	
Approach: North Bound		Approach: North Bound		Level Of Service: B	
Movement: L - T - R		Movement: L - T - R		Level Of Service: B	
Control: Protected		Control: Protected		Level Of Service: B	
Rights: Include		Rights: Include		Level Of Service: B	
Min. Green: 10 20 20 10 20 20		Min. Green: 0 0 0 0 0 0		Level Of Service: B	
Lanes: 2 0 0 1 0 1		Lanes: 0 0 0 0 0 0		Level Of Service: B	
Volume Module:		Volume Module:		Level Of Service: B	
Base Vol:		Base Vol:		Level Of Service: B	
Growth Adj:		Growth Adj:		Level Of Service: B	
Initial Bse:		Initial Bse:		Level Of Service: B	
Added Vol:		Added Vol:		Level Of Service: B	
PasserByVol:		PasserByVol:		Level Of Service: B	
Initial Fut:		Initial Fut:		Level Of Service: B	
User Adj:		User Adj:		Level Of Service: B	
PHF Adj:		PHF Adj:		Level Of Service: B	
PHF Volume:		PHF Volume:		Level Of Service: B	
Reduced Vol:		Reduced Vol:		Level Of Service: B	
Reduced Vol:		Reduced Vol:		Level Of Service: B	
PCE Adj:		PCE Adj:		Level Of Service: B	
MLF Adj:		MLF Adj:		Level Of Service: B	
Final Vol:		Final Vol:		Level Of Service: B	
Saturation Flow Module:		Saturation Flow Module:		Level Of Service: B	
Sat/Lane:		Sat/Lane:		Level Of Service: B	
Adjustment:		Adjustment:		Level Of Service: B	
Lanes:		Lanes:		Level Of Service: B	
Final Sat:		Final Sat:		Level Of Service: B	
Capacity Analysis Module:		Capacity Analysis Module:		Level Of Service: B	
Vol/Sat:		Vol/Sat:		Level Of Service: B	
Crit Moves:		Crit Moves:		Level Of Service: B	
Green/Cycle:		Green/Cycle:		Level Of Service: B	
Volume/Cap:		Volume/Cap:		Level Of Service: B	
Level Of Service Module:		Level Of Service Module:		Level Of Service: B	
Delay/Veh:		Delay/Veh:		Level Of Service: B	
User DelAdj:		User DelAdj:		Level Of Service: B	
AdjDel/Veh:		AdjDel/Veh:		Level Of Service: B	
Queue:		Queue:		Level Of Service: B	

Table J.7-4 (Continued)

A-PM.CMD		Tue Nov 5, 1996 10:49:51		Page 18-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 19-1	
Maximum Marine/Maximum Rail Alternative		Maximum Marine/Maximum Rail Alternative		PM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		PM Peak Hour	
1994 HCM Unsignalized Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		PM Peak Hour	
Intersection #17 14th St./ I-880 Frontage Rd.		Intersection #18 W.Grand Ave./ I-880 Frontage Rd.		PM Peak Hour	
Average Delay (sec/veh): 2.1 Worst Case Level Of Service: C		Cycle (sec): 100 Critical Vol./Cap. (X): 0.639		Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): 22.1	
Approach: North Bound South Bound East Bound West Bound		Optimal Cycle: 81 Level Of Service: C		Approach: North Bound South Bound East Bound West Bound	
Movement: L - T - R L - T - R L - T - R L - T - R		Control: L - T - R L - T - R L - T - R L - T - R		Movement: L - T - R L - T - R L - T - R L - T - R	
Rights: Uncontrolled Include Stop Sign		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Lanes: 0 0 1 1 0 1 0 2 0 0 0 0 0 0 0 0 1 0 0 0 1		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Volume Module:		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Base Vol: 0 62 130 4 0 0 0 0 0 0 0 0 115 0 7		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Initial Bse: 0 62 130 4 0 0 0 0 0 0 0 0 115 0 7		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Added Vol: 0 365 0 0 268 0 0 0 0 0 0 0 0 0 0		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Initial Fut: 0 427 130 4 268 0 0 0 0 0 0 0 115 0 7		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
PHF Volume: 0 427 130 4 268 0 0 0 0 0 0 0 115 0 7		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Final Vol: 0 427 130 4 268 0 0 0 0 0 0 0 115 0 7		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Adjusted Volume Module:		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Grade: 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Cycle/Cars: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Truck/Comb: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
PCE Adj: 1.10 1.00 1.00 1.10 1.00 1.00 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Cycl/Car PCE: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Trck/Comb PCE: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Adj Vol: 0 427 130 4 268 0 0 0 0 0 0 0 127 0 8		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Critical Gap Module:		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
MoveUp Time: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Critical Gap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Capacity Module:		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Conflict Vol: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Potent Cap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Adj Cap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Move Cap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Level Of Service Module:		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Stopped Del: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
LOS by Move: A * * * * * A * * * * * C * * * * *		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Shared Cap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Shrd StpDel: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
Shared LOS: *		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	
ApproachDel: 0.0 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 15.1		Control: Split Phase Split Phase Split Phase Split Phase		Rights: Include Include Include Include	

Table J.7-5

B-AM.CMD		Tue Nov 5, 1996 13:06:45				Page 1-1		Page 1-2	
		FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR			
		Minimum Marine/Minimum Rail Alternative				Minimum Marine/Minimum Rail Alternative			
		AM Peak Hour				AM Peak Hour			
Trip Generation Report									
Forecast for AM Peak Hour									
Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total % Of Trips	Total % Of Trips
Zone 1 Subtotal									
1	New Harbor	391.00	Employees	0.26	0.05	102	20	122	2.3
Zone 2 Subtotal									
2	Hrbr Trns Ct	400.00	Employees	0.28	0.05	112	20	132	2.5
Zone 3 Subtotal									
3	J.I.T.	167.00	Employees	0.40	0.09	67	15	82	1.6
Zone 4 Subtotal									
4	SP Rail Term	150.00	Employees	0.40	0.09	60	13	73	1.4
Zone 5 Subtotal									
5	UP Rail Term	67.00	Employees	0.40	0.09	27	6	33	0.6
Zone 6 Subtotal									
6	Middle Harbr	516.00	Employees	0.26	0.05	134	26	160	3.0
Zone 7 Subtotal									
7	7th St Harbr	613.00	Employees	0.26	0.05	159	31	190	3.5
Zone 8 Subtotal									
8	Outer Harbor	792.00	Employees	0.26	0.05	206	40	246	4.5
Zone 9 Subtotal									
9	New Park	1.00	Total Trips	24.00	16.00	24	16	40	0.7
Zone 10 Subtotal									
10	New Harbor	1.00	Trucks Inter	46.00	49.00	46	49	95	1.7
Zone 11 Subtotal									
11	New Harbor	1.00	Trucks Inter	60.00	64.00	60	64	124	2.2
Zone 12 Subtotal									
12	Middle Harbr	1.00	Trucks Inter	72.00	77.00	72	77	149	2.7
Zone 13 Subtotal									
13	7th St Harbr	1.00	Trucks Inter	93.00	99.00	93	99	192	3.5
Zone 14 Subtotal									
14	Outer Harbor	1.00	Trucks Inter	115.00	122.00	115	122	237	4.3
Zone 15 Subtotal									
15	New Park	1.00	Truck External	226.00	241.00	226	241	467	8.5
Zone 16 Subtotal									
16	Middle Harbr	1.00	Truck External	197.00	210.00	197	210	407	7.7
Zone 17 Subtotal									
17	7th St Harbr	1.00	Truck External	175.00	180.00	175	180	355	6.7
Zone 18 Subtotal									
18	Outer Harbor	1.00	Truck External	59.00	63.00	59	63	122	2.3
Zone 19 Subtotal									
19	New Park	1.00	Truck External	298.00	317.00	298	317	615	11.6
Zone 20 Subtotal									
20	Middle Harbr	1.00	Truck External	354.00	377.00	354	377	731	13.8
Zone 21 Subtotal									
21	7th St Harbr	1.00	Truck External	457.00	487.00	457	487	944	17.9
Zone 22 Subtotal									
22	Outer Harbor	1.00	Truck External	457.00	487.00	457	487	944	17.9
Zone 23 Subtotal									
TOTAL									
						2928	2351	5279	100.0

Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland

J.7-55

Table J.7-5 (Continued)

B-AM.CMD		Tue Nov 5, 1996 13:06:45										B-AM.CMD		Tue Nov 5, 1996 13:06:45										Page 3-1	
		FISCO/Port Vision 2000 EIS/EIR												FISCO/Port Vision 2000 EIS/EIR											
		Minimum Marine/Minimum Rail Alternative												Minimum Marine/Minimum Rail Alternative											
		AM Peak Hour												AM Peak Hour											
		Trip Distribution Report												Turning Movement Report											
		Percent Of Trips Existing												AM Peak Hour											
		To Gates												Left Thru Right											
		3	4	5	11	12	13	14	15	16				Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right		
Zone																									
1	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0				5	78	0	287	0	0	5	0	0	0	0	375
2	0.0	0.0	0.0	0.0	10.0	30.0	7.0	19.0	19.0	15.0				0	282	0	391	224	147	0	0	0	0	0	1043
3	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0				0	360	0	678	224	147	0	5	0	0	0	1418
4	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0															
5	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0															
6	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0															
7	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0															
8	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0															
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0															
11	45.7	40.6	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0															
16	45.7	40.6	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0															
17	45.7	40.6	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0															
18	45.7	40.6	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0															
21	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0															
23	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0															
24	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0															
25	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0															
26	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0															
27	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0															
28	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0															

Table J.7-5 (Continued)

B-AM.CMD		Tue Nov 5, 1996 13:06:45		Page 3-2	
FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour					
Volume	Northbound	Southbound	Eastbound	Westbound	Total
Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right Volume
#13 Adeline St./ 5th St./ I-880 SB Ramp					
Base	0 0 0	72 109 165	256 51 0	0 169 364	1186
Added	125 123 451	0 189 0	0 207 569	0 0 1655	
Total	125 123 451	72 298 165	256 51 207	569 169 364	2851
#14 Union St./ 5th St./ I-880 North Ramps					
Base	0 175 45	0 154 31	24 43 13	205 31 115	836
Added	0 0 207	0 0 0	0 0 333	0 0 333	
Total	0 175 252	0 154 31	24 43 13	330 31 115	1169
#15 7th St./ I-880 NB Ramps / Frontage Rd.					
Base	0 548 21	17 0 94	0 16 0	0 62 1	759
Added	679 0 0	0 0 379	332 13 0	0 19 0	1422
Total	679 548 21	17 0 473	332 29 0	0 81 1	2181
#16 7th St./ I-880 SB Ramps					
Base	0 0 0	0 0 0	0 0 65	0 0 65	
Added	0 0 0	0 0 0	0 345 589	0 1077 0	2011
Total	0 0 0	0 0 0	0 345 589	65 1077 0	2076
#17 14th St./ I-880 Frontage Rd.					
Base	0 0 89	30 0 0	0 0 140	0 6 265	
Added	0 332 0	0 379 0	0 0 0	0 711 0	
Total	0 332 89	30 379 0	0 0 140	0 6 976	
#18 W.Grand Ave./ I-880 Frontage Rd.					
Base	9 0 0	678 48 6	65 234 12	0 152 449	1653
Added	0 212 120	0 239 0	0 119 0	140 136 0	966
Total	9 212 120	678 287 6	65 353 12	140 288 449	2619
#134					
Base	0 0 0	0 0 0	0 0 0	0 0 0	0
Added	0 0 124	0 0 0	0 225 0	132 264 0	745
Total	0 0 124	0 0 0	0 225 0	132 264 0	745
#138					
Base	0 -156 0	0 -173 -26	-24 0 0	0 0 0	-379
Added	0 69 0	0 86 40	37 0 0	0 0 0	232
Total	0 -87 0	0 -87 14	13 0 0	0 0 0	-147
#158					
Base	0 -180 -129	0 0 0	0 0 0	0 0 0	-309
Added	0 205 139	0 0 0	0 0 0	0 0 0	344
Total	0 25 10	0 0 0	0 0 0	0 0 0	35

B-AM.CMD		Tue Nov 5, 1996 13:06:45		Page 3-3	
FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour					
Volume	Northbound	Southbound	Eastbound	Westbound	Total
Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right Volume
#159					
Base	-180 0 0	0 0 0	0 0 0	0 -178 0	-358
Added	205 0 0	0 0 0	0 0 0	0 195 0	400
Total	25 0 0	0 0 0	0 0 0	0 17 0	42
#160					
Base	0 0 0	0 0 0	0 0 0	-178 -180 0	-358
Added	0 0 0	0 0 0	0 0 0	195 205 0	400
Total	0 0 0	0 0 0	0 0 0	17 25 0	42
#161					
Base	0 0 0	0 -178 0	0 0 -286	0 0 0	-464
Added	0 0 0	0 195 0	0 0 340	0 0 0	536
Total	0 0 0	0 17 0	0 0 54	0 0 0	72
#165					
Base	0 0 0	0 -227 0	0 0 -495	0 0 0	-722
Added	0 0 0	0 207 0	0 0 589	0 0 0	797
Total	0 0 0	0 -20 0	0 0 94	0 0 0	75
#170					
Base	0 -153 -564	0 0 0	0 0 0	0 0 0	-717
Added	0 125 679	0 0 0	0 0 0	0 0 804	804
Total	0 -28 115	0 0 0	0 0 0	0 0 87	87
#177					
Base	0 0 0	0 -351 0	0 -129 0	0 0 0	-480
Added	0 0 0	0 389 0	0 139 0	0 0 0	528
Total	0 0 0	0 38 0	0 10 0	0 0 0	48
#178					
Base	0 -266 0	0 0 0	-104 -25 0	0 0 0	-395
Added	0 302 0	0 0 0	104 35 0	0 0 0	442
Total	0 36 0	0 0 0	0 10 0	0 0 0	47
#182					
Base	0 -370 0	0 0 -475	0 0 0	0 0 0	-845
Added	0 407 0	0 0 515	0 0 0	0 0 0	922
Total	0 37 0	0 0 40	0 0 0	0 0 0	77
#201					
Base	0 0 0	0 0 0	0 -932 0	0 0 0	-932
Added	0 0 0	0 0 0	0 1040 0	0 0 0	1040
Total	0 0 0	0 0 0	0 108 0	0 0 0	108

Table J.7-5 (Continued)

B-AM.CMD				Tue Nov 5, 1996 13:06:45				Page 3-4				B-AM.CMD				Tue Nov 5, 1996 13:06:45				Page 3-5				
				FISCO/Port Vision 2000 EIS/EIR								FISCO/Port Vision 2000 EIS/EIR												
				Minimum Marine/Minimum Rail Alternative								Minimum Marine/Minimum Rail Alternative												
				AM Peak Hour								AM Peak Hour												
Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Type	Left	Thru	Right	Left	Thru	Right
#204																		#244						
Base	0	0	0	-352	-580	0	0	0	0	0	0	0	0	0	0	0	0	Base	0	0	0	0	0	0
Added	0	0	0	391	649	0	0	0	0	0	0	0	0	0	0	0	0	Added	0	0	0	0	0	0
Total	0	0	0	39	69	0	0	0	0	0	0	0	0	0	0	0	0	Total	0	0	0	0	0	0
#207																		#244						
Base	0	-714	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Base	0	0	0	0	0	0
Added	0	813	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Added	0	0	0	0	0	0
Total	0	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Total	0	0	0	0	0	0
#214																		#244						
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Base	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Added	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Total	0	0	0	0	0	0
#217																		#244						
Base	0	0	0	0	-45	0	0	0	0	0	0	0	0	0	0	0	0	Base	0	0	0	0	0	0
Added	0	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	Added	0	0	0	0	0	0
Total	0	0	0	0	-7	0	0	0	0	0	0	0	0	0	0	0	0	Total	0	0	0	0	0	0
#218																		#244						
Base	0	-21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Base	0	0	0	0	0	0
Added	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Added	0	0	0	0	0	0
Total	0	-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Total	0	0	0	0	0	0
#219																		#244						
Base	0	-43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Base	0	0	0	0	0	0
Added	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Added	0	0	0	0	0	0
Total	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Total	0	0	0	0	0	0
#220																		#244						
Base	0	0	0	0	-45	-34	0	0	0	0	0	0	0	0	0	0	0	Base	0	0	0	0	0	0
Added	0	0	0	0	38	46	0	0	0	0	0	0	0	0	0	0	0	Added	0	0	0	0	0	0
Total	0	0	0	0	-7	12	0	0	0	0	0	0	0	0	0	0	0	Total	0	0	0	0	0	0
#225																		#244						
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Base	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Added	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Total	0	0	0	0	0	0
#226																		#244						
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Base	0	0	0	0	0	0
Added	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	Added	0	0	0	0	0	0
Total	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	Total	0	0	0	0	0	0

Table J.7-5 (Continued)

B-AM, CMD				Tue Nov 5, 1996 13:06:45												Page 4-1											
FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour																				FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative AM Peak Hour				Page 4-2			
Link Volume Report AM Peak Hour																				Link Volume Report AM Peak Hour							
Volume		NB Link		SB Link		EB Link		WB Link		Total		Volume		NB Link		SB Link		EB Link		WB Link		Total					
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	Type	In	Out	Total	In	Out	Total	In	Out	Total					
#13 Adeline St./ 5th St./ I-880 SB Ramp																											
Base	0	109	109	346	620	966	307	334	641	533	123	656	2372														
Added	700	966	1665	189	123	313	207	125	333	569	451	1020	3330														
Total	700	1075	1774	535	743	1279	514	459	974	1102	574	1676	5702														
#14 Union St./ 5th St./ I-880 North Ramps																											
Base	220	372	592	185	314	499	80	62	142	351	88	439	1672														
Added	207	125	333	0	0	0	0	0	0	125	207	333	665														
Total	427	497	925	185	314	499	80	62	142	476	295	772	2337														
#15 7th St./ I-880 NB Ramps / Frontage Rd.																											
Base	569	0	569	111	549	660	16	156	172	63	54	117	1518														
Added	679	0	679	379	332	711	345	1077	1422	19	13	32	2843														
Total	1248	0	1248	490	881	1371	361	1233	1594	82	67	149	4361														
#16 7th St./ I-880 SB Ramps																											
Base	0	65	65	0	0	0	0	0	0	65	0	65	130														
Added	0	589	589	0	0	0	934	1077	2011	1077	345	1422	4022														
Total	0	654	654	0	0	0	934	1077	2011	1142	345	1487	4152														
#17 14th St./ I-880 Frontage Rd.																											
Base	89	140	229	30	6	36	0	0	0	146	119	265	530														
Added	332	379	711	379	332	711	0	0	0	0	0	0	1421														
Total	421	519	940	409	338	747	0	0	0	146	119	265	1951														
#18 W. Grand Ave./ I-880 Frontage Rd.																											
Base	9	60	69	732	514	1246	311	167	478	601	912	1513	3306														
Added	332	379	711	239	212	451	119	136	255	276	239	515	1932														
Total	341	439	780	971	726	1697	430	303	733	877	1151	2028	5238														
#134																											
Base	0	0	0	0	0	0	0	0	0	0	0	0	0														
Added	124	132	256	0	0	0	225	264	489	396	349	745	1490														
Total	124	132	256	0	0	0	225	264	489	396	349	745	1490														
#138																											
Base	-156	-173	-329	-199	-180	-379	-24	-26	-50	0	0	0	-758														
Added	69	86	155	126	106	232	37	40	77	0	0	0	463														
Total	-87	-87	-174	-73	-74	-147	13	14	27	0	0	0	-295														
#158																											
Base	-309	0	-309	0	-180	-180	0	0	0	0	-129	-129	-618														
Added	344	0	344	0	205	205	0	0	0	0	139	139	688														
Total	35	0	35	0	25	25	0	0	0	0	10	10	70														

Table J.7-5 (Continued)

B-AM.CMD				Tue Nov 5, 1996 13:06:45				B-AM.CMD				Tue Nov 5, 1996 13:06:45				Page 4-4			
				Page 4-3															
				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR				Minimum Marine/Minimum Rail Alternative				Minimum Marine/Minimum Rail Alternative			
				AM Peak Hour				AM Peak Hour				AM Peak Hour				AM Peak Hour			
Volume	NB Link	SB Link	EB Link	WB Link	Total	Volume	NB Link	SB Link	EB Link	WB Link	Total	Volume	NB Link	SB Link	EB Link	WB Link	Total	Volume	Total
Type	In	Out	Total	In	Out	Type	In	Out	Total	In	Out	Type	In	Out	Total	In	Out	Type	Total
#159																			
Base	-180	0	-180	0	0	Base	-180	0	-180	0	0	Base	-180	0	-180	0	0	Base	-1864
Added	205	0	205	0	0	Added	205	0	205	0	0	Added	205	0	205	0	0	Added	2080
Total	25	0	25	0	0	Total	25	0	25	0	0	Total	25	0	25	0	0	Total	216
#160																			
Base	0	-178	-178	0	0	Base	0	-178	-178	0	0	Base	0	-178	-178	0	0	Base	-222
Added	0	195	195	0	0	Added	0	195	195	0	0	Added	0	195	195	0	0	Added	2496
Total	0	17	17	0	0	Total	0	17	17	0	0	Total	0	17	17	0	0	Total	276
#161																			
Base	0	-464	-464	-178	0	Base	0	-464	-464	-178	0	Base	0	-464	-464	-178	0	Base	-2220
Added	0	536	536	195	0	Added	0	536	536	195	0	Added	0	536	536	195	0	Added	2496
Total	0	72	72	17	0	Total	0	72	72	17	0	Total	0	72	72	17	0	Total	276
#165																			
Base	0	-722	-722	-227	0	Base	0	-722	-722	-227	0	Base	0	-722	-722	-227	0	Base	-140
Added	0	797	797	207	0	Added	0	797	797	207	0	Added	0	797	797	207	0	Added	146
Total	0	75	75	-20	0	Total	0	75	75	-20	0	Total	0	75	75	-20	0	Total	6
#170																			
Base	-717	0	-717	0	-153	Base	-717	0	-717	0	-153	Base	-717	0	-717	0	-153	Base	-92
Added	804	0	804	0	125	Added	804	0	804	0	125	Added	804	0	804	0	125	Added	103
Total	87	0	87	0	-28	Total	87	0	87	0	-28	Total	87	0	87	0	-28	Total	11
#177																			
Base	0	-351	-351	0	-351	Base	0	-351	-351	0	-351	Base	0	-351	-351	0	-351	Base	-126
Added	0	389	389	389	0	Added	0	389	389	389	0	Added	0	389	389	389	0	Added	139
Total	0	38	38	38	0	Total	0	38	38	38	0	Total	0	38	38	38	0	Total	13
#178																			
Base	-266	0	-266	0	-370	Base	-266	0	-266	0	-370	Base	-266	0	-266	0	-370	Base	-198
Added	302	0	302	0	407	Added	302	0	302	0	407	Added	302	0	302	0	407	Added	214
Total	36	0	36	0	37	Total	36	0	36	0	37	Total	36	0	36	0	37	Total	16
#182																			
Base	-370	0	-370	-475	-370	Base	-370	0	-370	-475	-370	Base	-370	0	-370	-475	-370	Base	-832
Added	407	0	407	515	407	Added	407	0	407	515	407	Added	407	0	407	515	407	Added	915
Total	37	0	37	40	37	Total	37	0	37	40	37	Total	37	0	37	40	37	Total	83
#201																			
Base	0	0	0	0	0	Base	0	0	0	0	0	Base	0	0	0	0	0	Base	-712
Added	0	0	0	0	0	Added	0	0	0	0	0	Added	0	0	0	0	0	Added	791
Total	0	0	0	0	0	Total	0	0	0	0	0	Total	0	0	0	0	0	Total	79

Table J.7-5 (Continued)

B-AM.CMD		Tue Nov 5, 1996 13:06:46		Page 8-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 9-1	
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative			
AM Peak Hour		AM Peak Hour			
Level Of Service Computation Report					
1994 HCM Operations Method (Future Volume Alternative)					
Intersection #5 Maritime St./ 7th St. Extension					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.372		
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	10.8		
Optimal Cycle:	48	Level Of Service:	B		
Approach: North Bound South Bound East Bound West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Protected	Protected	Protected	Protected	
Rights:	Include	Ovl	Include		
Min. Green:	10 20 0 0 20 20 10 0 20 0 0 0				
Lanes:	2 0 2 0 0 0 2 0 1 2 0 0 1 0 0 0 0				
Volume Module:					
Base Vol:	159 0 0 0 334 69 0 37 0 0 0				
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
Initial Bse:	159 0 0 0 334 69 0 37 0 0 0				
Added Vol:	310 489 0 0 529 86 70 0 279 0 0 0				
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0				
Initial Fut:	469 489 0 0 529 420 139 0 316 0 0 0				
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
PHF Volume:	469 489 0 0 529 420 139 0 316 0 0 0				
Reduct Vol:	0 0 0 0 0 0 0 0 0 0 0 0				
Reduced Vol:	469 489 0 0 529 420 139 0 316 0 0 0				
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
MLF Adj:	1.03 1.05 1.00 1.00 1.05 1.00 1.03 1.00 1.00 1.00 1.00				
Final Vol:	483 514 0 0 556 420 143 0 316 0 0 0				
Saturation Flow Module:					
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900				
Adjustment:	0.95 1.00 1.00 0.85 0.95 1.00 0.85 1.00 1.00 1.00				
Lanes:	2.00 2.00 0.00 0.00 2.00 0.00 1.00 0.00 0.00 0.00				
Final Sat:	3610 3800 0 0 3800 1615 3610 0 1615 0 0				
Capacity Analysis Module:					
Vol/Sat:	0.13 0.14 0.00 0.00 0.15 0.26 0.04 0.00 0.20 0.00 0.00				
Crit Moves:	****				
Green/Cycle:	0.36 0.75 0.00 0.00 0.39 0.56 0.17 0.00 0.53 0.00 0.00				
Volume/Cap:	0.37 0.18 0.00 0.00 0.37 0.46 0.24 0.00 0.37 0.00 0.00				
Level Of Service Module:					
Delay/Veh:	15.4 2.3 0.0 0.0 14.0 8.7 23.4 0.0 9.1 0.0 0.0				
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
AdjDel/Veh:	15.4 2.3 0.0 0.0 14.0 8.7 23.4 0.0 9.1 0.0 0.0				
Queue:	10 4 0 0 11 7 3 0 5 0 0				

B-AM.CMD		Tue Nov 5, 1996 13:06:46		Page 9-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 9-1	
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative			
AM Peak Hour		AM Peak Hour			
Level Of Service Computation Report					
1994 HCM Operations Method (Future Volume Alternative)					
Intersection #6 7th St./ 7th St. Extension					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.571		
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	18.9		
Optimal Cycle:	68	Level Of Service:	C		
Approach: North Bound South Bound East Bound West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Protected	Protected	Protected	Protected	
Rights:	Include	Include	Include		
Min. Green:	10 20 20 10 20 20 10 20 20 0 20 20				
Lanes:	1 0 1 1 0 1 0 1 1 0 1 0 2 1 0 1 0 2 0 1				
Volume Module:					
Base Vol:	15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
Initial Bse:	15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Added Vol:	58 138 49 463 160 186 139 422 62 55 499 523				
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Initial Fut:	73 138 49 463 160 186 139 422 62 81 499 577				
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
PHF Volume:	73 138 49 463 160 186 139 422 62 81 499 577				
Reduct Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Reduced Vol:	73 138 49 463 160 186 139 422 62 81 499 577				
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
MLF Adj:	1.00 1.05 1.05 1.00 1.00 1.00 1.00 1.10 1.10 1.00 1.05 1.00				
Final Vol:	73 145 51 463 160 186 139 464 68 81 524 577				
Saturation Flow Module:					
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900				
Adjustment:	0.95 0.96 0.96 0.95 1.00 0.85 0.95 0.98 0.98 0.95 1.00 0.85				
Lanes:	1.00 1.48 0.52 1.00 1.00 1.00 1.00 2.62 0.38 1.00 2.00 1.00				
Final Sat:	1805 2699 949 1805 1900 1615 1805 4872 714 1805 3800 1615				
Capacity Analysis Module:					
Vol/Sat:	0.04 0.05 0.05 0.26 0.08 0.12 0.08 0.10 0.10 0.04 0.14 0.36				
Crit Moves:	****				
Green/Cycle:	0.20 0.20 0.20 0.39 0.39 0.39 0.12 0.20 0.20 0.13 0.21 0.60				
Volume/Cap:	0.21 0.27 0.27 0.65 0.21 0.29 0.65 0.48 0.48 0.35 0.65 0.59				
Level Of Service Module:					
Delay/Veh:	21.7 21.9 21.9 17.6 12.9 13.4 32.1 23.1 23.1 26.1 24.7 8.7				
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
AdjDel/Veh:	21.7 21.9 21.9 17.6 12.9 13.4 32.1 23.1 23.1 26.1 24.7 8.7				
Queue:	2 3 1 11 3 4 4 11 2 2 14 10				

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Table J.7-5 (Continued)

B-AM.CMD		Tue Nov 5, 1996 13:06:46		Page 10-1			
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 11-1			
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative					
AM Peak Hour		AM Peak Hour					
Level Of Service Computation Report		Level Of Service Computation Report					
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)					
Intersection #7 Middle Harbor Rd. / Gate 2		Intersection #8 Adeline St./ 3rd St.					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.689	Cycle (sec):	100	Critical Vol./Cap. (X):	0.618
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	15.2	Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	47.9
Optimal Cycle:	73	Level Of Service:	C	Optimal Cycle:	92	Level Of Service:	E
Approach: North Bound South Bound East Bound West Bound		Approach: North Bound South Bound East Bound West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Split Phase	Split Phase	Split Phase
Rights:	Include	Include	Include	Include	Include	Include	Include
Min. Green:	10 0 20	0 0 0 0	0 20 20	10 20	10 20 20	10 20 20	10 20 20
Lanes:	1 0 0 0 1	0 0 0 0 0	0 0 1 1 0	1 0 2 0 0	0 1 0 1 0	0 1 0 1 0	0 1 0 1 0
Volume Module:		Volume Module:					
Base Vol:	53	0 45	0 0 0 0	39	208 338	0 26	0 29
Growth Adj:	1.00	1.00	1.00	1.00	1.00 1.00	1.00	1.00
Initial Bse:	53	0 45	0 0 0 0	39	208 338	0 26	0 29
Added Vol:	1	0 207	0 0 0 0	8	300 271	0 0	0 0
PasserByVol:	106	0 159	0 0 0 0	71	106 0	0 0	0 0
Initial Fut:	160	0 411	0 0 0 0	202	118 614 609	0 0	0 0
User Adj:	1.00	1.00	1.00	1.00	1.00 1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00 1.00	1.00	1.00
PHF Volume:	160	0 411	0 0 0 0	202	118 614 609	0 0	0 0
Reduc Vol:	0	0 0	0 0 0 0	0	0 0	0 0	0 0
Reduced Vol:	160	0 411	0 0 0 0	202	118 614 609	0 0	0 0
PCE Adj:	1.00	1.00	1.00	1.00	1.00 1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00 1.05	1.05	1.05
Final Vol:	160	0 411	0 0 0 0	213	124 614 640	0 27	0 29
Saturation Flow Module:		Saturation Flow Module:					
Sat/Lane:	1900	1900	1900	1900	1900 1900	1900	1900
Adjustment:	0.95	1.00	1.00	1.00	0.94 0.94	0.97 0.97	0.85
Lanes:	1.00	0.00	0.00	0.00	1.26 0.74	0.57 0.43	1.00
Final Sat:	1805	0 1615	0 0 0 0	2258	1314 1805 3800	96 1053	790
Capacity Analysis Module:		Capacity Analysis Module:					
Vol/Sat:	0.09	0.00	0.00	0.00	0.09 0.34	0.01 0.01	0.02
Crit Moves:	****	****	****	****	****	****	****
Green/Cycle:	0.34	0.00	0.00	0.00	0.20 0.46	0.20 0.20	0.20
Volume/Cap:	0.26	0.00	0.00	0.00	0.47 0.74	0.04 0.04	0.09
Level Of Service Module:		Level Of Service Module:					
Delay/Veh:	15.4	0.0	0.0	0.0	23.2 16.9	20.8 20.8	21.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00 1.00	1.00	1.00
AdjDel/Veh:	15.4	0.0	0.0	0.0	23.2 16.9	20.8 20.8	21.1
Queue:	3	0 11	0 0 0 0	5	3 15 7	2 0 0	1

Table J.7-5 (Continued)

B-AM, CMD		Tue Nov 5, 1996 13:06:46		Page 12-1				
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 13-1				
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		AM Peak Hour				
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report				
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)				
Intersection #9 7th/New Middle Harbor		Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps		Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps				
Cycle (sec):	100	Critical Vol./Cap. (X):	0.313	Cycle (sec):	100	Critical Vol./Cap. (X):	0.561	
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	9.8	Loss Time (sec):	10 (Y+R = 4 sec)	Average Delay (sec/veh):	17.8	
Optimal Cycle:	58	Level Of Service:	B	Optimal Cycle:	70	Level Of Service:	C	
Approach:	North Bound	South Bound	East Bound	West Bound	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	10	0	20	0	0	20	10	20
Lanes:	1	0	0	1	0	0	1	0
Volume Module:								
Base Vol:	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0
Added Vol:	0	122	0	0	0	501	0	133
PasserByVol:	0	0	0	0	0	0	0	0
Initial Fut:	0	122	0	0	0	501	0	133
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	122	0	0	0	501	0	133
Reduced Vol:	0	0	0	0	0	0	0	0
Reduced Vol:	0	122	0	0	0	501	0	133
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	122	0	0	0	526	0	133
Saturation Flow Module:								
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1900	0	1615	0	0	3800	0	1805
Capacity Analysis Module:								
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.07
Crit Moves:	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.24
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.24
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.31
Level Of Service Module:								
Delay/Veh:	0.0	0.0	20.3	0.0	0.0	11.7	0.0	20.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	20.3	0.0	0.0	11.7	0.0	20.5
Queue:	0	0	3	0	0	9	0	3

B-AM, CMD		Tue Nov 5, 1996 13:06:46		Page 13-1				
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 13-1				
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		AM Peak Hour				
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report				
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)				
Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps		Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps		Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps				
Cycle (sec):	100	Critical Vol./Cap. (X):	0.561	Cycle (sec):	100	Critical Vol./Cap. (X):	0.561	
Loss Time (sec):	10 (Y+R = 4 sec)	Average Delay (sec/veh):	17.8	Loss Time (sec):	10 (Y+R = 4 sec)	Average Delay (sec/veh):	17.8	
Optimal Cycle:	70	Level Of Service:	C	Optimal Cycle:	70	Level Of Service:	C	
Approach:	North Bound	South Bound	East Bound	West Bound	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	10	20	20	10	20	20	10	20
Lanes:	2	0	0	1	0	0	1	0
Volume Module:								
Base Vol:	0	33	0	16	28	47	48	394
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	33	0	16	28	47	48	394
Added Vol:	310	0	119	0	0	0	0	478
PasserByVol:	0	0	0	0	0	0	0	0
Initial Fut:	310	33	119	16	28	47	48	394
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	310	33	119	16	28	47	48	394
Reduced Vol:	0	0	0	0	0	0	0	0
Reduced Vol:	310	33	119	16	28	47	48	394
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	319	33	119	16	28	47	48	394
Saturation Flow Module:								
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.88	0.88	0.95	0.91	0.91	0.95	1.00
Lanes:	2.00	0.22	0.78	1.00	0.37	0.63	1.00	1.00
Final Sat.:	3610	363	1309	1805	645	1084	1805	1900
Capacity Analysis Module:								
Vol/Sat:	0.09	0.09	0.09	0.01	0.04	0.04	0.03	0.21
Crit Moves:	0.09	0.09	0.09	0.01	0.04	0.04	0.03	0.21
Green/Cycle:	0.13	0.22	0.22	0.11	0.20	0.20	0.19	0.45
Volume/Cap:	0.66	0.41	0.41	0.08	0.22	0.22	0.14	0.46
Level Of Service Module:								
Delay/Veh:	28.9	21.9	21.9	25.7	21.7	21.7	21.9	12.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.9	21.9	21.9	25.7	21.7	21.7	21.9	12.3
Queue:	9	1	3	0	1	1	1	8

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Table J.7-5 (Continued)

B-AM.CMD		Tue Nov 5, 1996 13:06:46		Page 14-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 15-1	
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		AM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp		Intersection #14 Union St./ 5th St./ I-880 North Ramps		Intersection #14 Union St./ 5th St./ I-880 North Ramps	
Cycle (sec):	100	Critical Vol./Cap. (X):	0.731	Cycle (sec):	100
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	20.8	Loss Time (sec):	11 (Y+R = 4 sec)
Optimal Cycle:	82	Level Of Service:	C	Optimal Cycle:	71
Approach:	North Bound	South Bound	East Bound	West Bound	South Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected
Rights:	Ovl	Include	Include	Include	Include
Min. Green:	10 20 20	10 20 20	10 10 20	10 20 20	10 20 20
Lanes:	1 0 1 1 0	1 0 1 1 0	1 1 0 1 0	1 0 1 0	1 0 1 0
Volume Module:					
Base Vol:	0 0 0	72 109 165	256 51	0 175 45	0 154 31
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	0 0 0	72 109 165	256 51	0 175 45	0 154 31
Added Vol:	125 123 451	0 189 0	0 0 207	0 207 0	0 0 0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Initial Fut:	125 123 451	72 298 165	256 51	0 175 252	0 154 31
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	125 123 451	72 298 165	256 51	0 175 252	0 154 31
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.05 1.05	1.05 1.05 1.00	1.00 1.05 1.05	1.05 1.05 1.05
Final Vol:	125 123 451	72 313 173	269 51	0 193 278	0 162 33
Saturation Flow Module:					
Sat/Lane:	1900 1900	1900 1900 1900	1900 1900 1900	1900 1900	1900 1900
Adjustment:	0.95 1.00 0.85	0.95 0.95 0.95	0.95 0.88 0.88	0.95 0.92 0.92	0.95 0.92 0.92
Lanes:	1.00 1.00 1.00	1.00 1.29 0.71	1.66 0.34 1.00	1.00 0.96 1.04	1.00 0.96 1.04
Final Sat:	1805 1900 1615	1805 2325 1285	2997 568 1672	1805 1682 1815	1805 1900 1615
Capacity Analysis Module:					
Vol/Sat:	0.07 0.06 0.28	0.04 0.13 0.13	0.09 0.09 0.12	0.32 0.11 0.11	0.00 0.09 0.09
Crit Moves:	****	****	****	****	****
Green/Cycle:	0.10 0.20 0.58	0.10 0.20 0.20	0.20 0.20 0.20	0.38 0.38 0.38	0.00 0.23 0.23
Volume/Cap:	0.69 0.32 0.48	0.40 0.67 0.67	0.45 0.45 0.62	0.83 0.28 0.28	0.00 0.40 0.40
Level Of Service Module:					
Delay/Veh:	35.4 22.1 8.2	28.0 25.6 25.6	22.9 22.9 24.6	24.0 13.9 13.9	0.0 21.2 21.2
User DelAdj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	35.4 22.1 8.2	28.0 25.6 25.6	22.9 22.9 24.6	24.0 13.9 13.9	0.0 21.2 21.2
Queue:	4 3 7	2 8 5	7 1 6	16 3 4	0 5 7

Table J.7-5 (Continued)

B-AM, CMD		Tue Nov 5, 1996 13:06:46		Page 16-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 17-1	
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		AM Peak Hour	
Level Of Service: Computation Report		Level Of Service: Computation Report		Level Of Service: Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #15 7th St. / I-880 NB Ramps / Frontage Rd.		Intersection #16 7th St. / I-880 SB Ramps		Intersection #16 7th St. / I-880 SB Ramps	
Cycle (sec): 100		Cycle (sec): 100		Cycle (sec): 100	
Loss Time (sec): 10 (Y+R = 4 sec)		Loss Time (sec): 10 (Y+R = 4 sec)		Loss Time (sec): 10 (Y+R = 4 sec)	
Optimal Cycle: 70		Optimal Cycle: 35		Optimal Cycle: 35	
Approach: North Bound		Approach: North Bound		Approach: North Bound	
Movement: L - T - R		Movement: L - T - R		Movement: L - T - R	
Control: Protected		Control: Protected		Control: Protected	
Rights: Include		Rights: Include		Rights: Include	
Min. Green: 10 20 20		Min. Green: 0 0 0		Min. Green: 0 0 0	
Lanes: 2 0 0 1 0		Lanes: 0 0 0 0 0		Lanes: 0 0 0 0 0	
Volume Module:		Volume Module:		Volume Module:	
Base Vol: 0 548		Base Vol: 0 0 0		Base Vol: 0 0 0	
Growth Adj: 1.00 1.00		Growth Adj: 1.00 1.00		Growth Adj: 1.00 1.00	
Initial Bse: 0 548		Initial Bse: 0 0 0		Initial Bse: 0 0 0	
Added Vol: 679 0		Added Vol: 0 0 0		Added Vol: 0 0 0	
PasserByVol: 0 0		PasserByVol: 0 0		PasserByVol: 0 0	
Initial Fut: 679 548		Initial Fut: 0 0		Initial Fut: 0 0	
User Adj: 1.00 1.00		User Adj: 1.00 1.00		User Adj: 1.00 1.00	
PHF Adj: 1.00 1.00		PHF Adj: 1.00 1.00		PHF Adj: 1.00 1.00	
PHF Volume: 679 548		PHF Volume: 0 0		PHF Volume: 0 0	
Reduced Vol: 0 0		Reduced Vol: 0 0		Reduced Vol: 0 0	
Reduced Vol: 679 548		Reduced Vol: 0 0		Reduced Vol: 0 0	
PCE Adj: 1.00 1.00		PCE Adj: 1.00 1.00		PCE Adj: 1.00 1.00	
MLF Adj: 1.03 1.00		MLF Adj: 1.00 1.00		MLF Adj: 1.00 1.00	
Final Vol: 699 548		Final Vol: 0 0		Final Vol: 0 0	
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane: 1900 1900		Sat/Lane: 1900 1900		Sat/Lane: 1900 1900	
Adjustment: 0.95 0.99		Adjustment: 1.00 1.00		Adjustment: 1.00 1.00	
Lanes: 2.00 0.96		Lanes: 0.00 0.00		Lanes: 0.00 0.00	
Final Sat: 3610 1812		Final Sat: 0 0		Final Sat: 0 0	
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat: 0.19 0.30		Vol/Sat: 0.00 0.00		Vol/Sat: 0.00 0.00	
Crit Moves: 0.27 0.37		Crit Moves: 0.00 0.00		Crit Moves: 0.00 0.00	
Green/Cycle: 0.27 0.37		Green/Cycle: 0.00 0.00		Green/Cycle: 0.00 0.00	
Volume/Cap: 0.71 0.81		Volume/Cap: 0.00 0.00		Volume/Cap: 0.00 0.00	
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh: 22.8 23.2		Delay/Veh: 0.0 0.0		Delay/Veh: 0.0 0.0	
User DelAdj: 1.00 1.00		User DelAdj: 1.00 1.00		User DelAdj: 1.00 1.00	
AdjDel/Veh: 22.8 23.2		AdjDel/Veh: 0.0 0.0		AdjDel/Veh: 0.0 0.0	
Queue: 18 15		Queue: 0 0		Queue: 0 0	

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Table J.7-5 (Continued)

B-AM.CMD		Tue Nov 5, 1996 13:06:46		Page 18-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 19-1	
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		AM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Unsignalized Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #17 14th St./ I-880 Frontage Rd.		Intersection #18 W.Grand Ave./ I-880 Frontage Rd.		Intersection #18 W.Grand Ave./ I-880 Frontage Rd.	
Average Delay (sec/veh): 3.2 Worst Case Level Of Service: C		Cycle (sec): 100 Critical Vol./Cap. (X): 0.498		Cycle (sec): 100 Critical Vol./Cap. (X): 0.498	
Approach: North Bound South Bound East Bound West Bound		Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): 21.1		Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): 21.1	
Movement: L - T - R L - T - R L - T - R L - T - R		Optimal Cycle: 81 Level Of Service: C		Optimal Cycle: 81 Level Of Service: C	
Control: Uncontrolled Uncontrolled Stop Sign Include Stop Sign		Approach: North Bound South Bound East Bound West Bound		Approach: North Bound South Bound East Bound West Bound	
Rights: 0 1 1 0 1 0 2 0 0 0 0 0 0 1 0 0 0 1		Movement: L - T - R L - T - R L - T - R L - T - R		Movement: L - T - R L - T - R L - T - R L - T - R	
Lanes: 0 1 1 0 1 0 2 0 0 0 0 0 0 1 0 0 0 1		Control: Split Phase Split Phase Split Phase Split Phase		Control: Split Phase Split Phase Split Phase Split Phase	
Volume Module:		Rights: Include Include Include Include		Rights: Include Include Include Include	
Base Vol: 0 0 89 30 0 0 0 0 0 0 0 0 0 140 0 6		Min. Green: 10 20 20 10 20 20 10 20 20 10 20 20		Min. Green: 10 20 20 10 20 20 10 20 20 10 20 20	
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Lanes: 1 0 1 1 0 1 1 0 1 0 1 0 1 0 1 0 1 1		Lanes: 1 0 1 1 0 1 1 0 1 0 1 0 1 0 1 0 1 1	
Initial Bse: 0 0 89 30 0 0 0 0 0 0 0 0 0 140 0 6		Volume Module:		Volume Module:	
Added Vol: 0 0 332 0 0 379 0 0 0 0 0 0 0 0 0 0 0		Base Vol: 9 0 0 678 48 6 65 234 12 0 152 443		Base Vol: 9 0 0 678 48 6 65 234 12 0 152 443	
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Fut: 0 0 332 89 30 379 0 0 0 0 0 0 0 140 0 6		Initial Bse: 9 0 0 678 48 6 65 234 12 0 152 443		Initial Bse: 9 0 0 678 48 6 65 234 12 0 152 443	
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Added Vol: 0 212 120 0 239 0 0 119 0 140 136 0		Added Vol: 0 212 120 0 239 0 0 119 0 140 136 0	
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0		PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0	
PHF Volume: 0 332 89 30 379 0 0 0 0 0 0 0 0 140 0 6		Initial Fut: 9 212 120 678 287 6 65 353 12 140 288 449		Initial Fut: 9 212 120 678 287 6 65 353 12 140 288 449	
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Final Vol: 0 332 89 30 379 0 0 0 0 0 0 0 0 140 0 6		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Adjusted Volume Module:		PHF Volume: 9 212 120 678 287 6 65 353 12 140 288 449		PHF Volume: 9 212 120 678 287 6 65 353 12 140 288 449	
Grade: 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%		Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Cycle/Cars: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Truck/Comb: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		MLF Adj: 1.00 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05		MLF Adj: 1.00 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05	
PCE Adj: 1.10 1.00 1.00 1.10 1.00 1.00 1.10 1.10 1.10 1.10 1.10 1.10		Final Vol.: 9 222 126 712 287 6 65 371 13 140 317 494		Final Vol.: 9 222 126 712 287 6 65 371 13 140 317 494	
Cycl/Car PCE: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Saturation Flow Module:		Saturation Flow Module:	
Trck/Comb PCE: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900		Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adj Vol.: 0 332 89 33 379 0 0 0 0 0 154 0 7		Adjustment: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95		Adjustment: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95	
Critical Gap Module:		Lanes: 1.00 1.28 0.72 2.00 0.98 0.02 1.00 1.93 0.07 1.00 1.17 1.83		Lanes: 1.00 1.28 0.72 2.00 0.98 0.02 1.00 1.93 0.07 1.00 1.17 1.83	
MoveUp Time:xxxxx xxxx xxxx 2.1 xxxx xxxxx xxxxx xxxxx 3.4 xxxx 2.6		Final Sat.: 1805 2303 1307 3610 1861 39 1805 3671 129 1805 2027 3160		Final Sat.: 1805 2303 1307 3610 1861 39 1805 3671 129 1805 2027 3160	
Critical Gp:xxxxx xxxx xxxx 5.5 xxxx xxxxx xxxxx xxxxx 7.0 xxxx 5.5		Capacity Analysis Module:		Capacity Analysis Module:	
Capacity Module:		Vol/Sat: 0.00 0.10 0.10 0.20 0.15 0.15 0.04 0.10 0.10 0.08 0.16		Vol/Sat: 0.00 0.10 0.10 0.20 0.15 0.15 0.04 0.10 0.10 0.08 0.16	
Conflict Vol: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Crit Moves: ****		Crit Moves: ****	
Potent Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Green/Cycle: 0.20 0.20 0.20 0.33 0.33 0.33 0.10 0.24 0.24 0.12 0.26		Green/Cycle: 0.20 0.20 0.20 0.33 0.33 0.33 0.10 0.24 0.24 0.12 0.26	
Adj Cap: 1.00 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Volume/Cap: 0.02 0.48 0.48 0.60 0.47 0.47 0.36 0.42 0.42 0.64 0.60		Volume/Cap: 0.02 0.48 0.48 0.60 0.47 0.47 0.36 0.42 0.42 0.64 0.60	
Move Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Level Of Service Module:		Level Of Service Module:	
Stopped Del:xxxxx xxxx xxxx 3.6 xxxx xxxxx xxxxx xxxxx 19.7 xxxx 3.3		Delay/Veh: 20.8 23.3 23.3 18.5 17.3 17.3 27.7 20.9 20.9 31.5 21.5		Delay/Veh: 20.8 23.3 23.3 18.5 17.3 17.3 27.7 20.9 20.9 31.5 21.5	
LOS by Move: * * * A * * * C * * * A		User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT		AdjDel/Veh: 20.8 23.3 23.3 18.5 17.3 17.3 27.7 20.9 20.9 31.5 21.5		AdjDel/Veh: 20.8 23.3 23.3 18.5 17.3 17.3 27.7 20.9 20.9 31.5 21.5	
Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		Queue: 0 6 3 17 6 0 2 9 0 4 8 12		Queue: 0 6 3 17 6 0 2 9 0 4 8 12	
Shrd StpDel:xxxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx		ApproachDel: 0.0 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		ApproachDel: 0.0 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	
Shared LOS: *		Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland		Traffic 6.8.0306 (c) 1996 Dowling Assoc. Licensed to Dowling Assoc., Oakland	

Table J.7-6

B-PM.CMD		Tue Nov 5, 1996 12:31:19		Page 1-1				
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 1-2				
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		PM Peak Hour				
Trip Generation Report		Forecast for PM Peak Hour		PM Peak Hour				
Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total % Of Trips Total
1	New Harbor	391.00	Employees	0.06	0.22	23	86	109 2.3
	Zone 1 Subtotal					23	86	109 2.3
2	Hrbr Trns Ct	400.00	Employees	0.06	0.21	24	84	108 2.3
	Zone 2 Subtotal					24	84	108 2.3
3	J.I.T.	167.00	Employees	0.10	0.36	17	60	77 1.7
	Zone 3 Subtotal					17	60	77 1.7
4	SP Rail Term	150.00	Employees	0.10	0.36	15	54	69 1.5
	Zone 4 Subtotal					15	54	69 1.5
5	UP Rail Term	67.00	Employees	0.10	0.36	7	24	31 0.7
	Zone 5 Subtotal					7	24	31 0.7
6	Middle Harbr	516.00	Employees	0.06	0.22	31	114	145 3.1
	Zone 6 Subtotal					31	114	145 3.1
7	7th St Harbr	613.00	Employees	0.06	0.22	37	135	172 3.7
	Zone 7 Subtotal					37	135	172 3.7
8	Outer Harbor	792.00	Employees	0.06	0.21	48	166	214 4.6
	Zone 8 Subtotal					48	166	214 4.6
10	New Park	1.00	Total Trips	16.00	38.00	16	38	54 1.2
	Zone 10 Subtotal					16	38	54 1.2
11	New Harbor	1.00	Trucks Inter	38.00	45.00	38	45	83 1.8
	Zone 11 Subtotal					38	45	83 1.8
16	Middle Harbr	1.00	Trucks Inter	50.00	59.00	50	59	109 2.3
	Zone 16 Subtotal					50	59	109 2.3
17	7th St Harbr	1.00	Trucks Inter	59.00	71.00	59	71	130 2.8
	Zone 17 Subtotal					59	71	130 2.8
18	Outer Harbor	1.00	Trucks Inter	76.00	91.00	76	91	167 3.6
	Zone 18 Subtotal					76	91	167 3.6
21	New Harbor	1.00	Truck External	185.00	222.00	185	222	407 8.8
	Zone 21 Subtotal					185	222	407 8.8
23	J.I.T.	1.00	Truck External	161.00	193.00	161	193	354 7.6
TOTAL						1888	2762	4650 100.0

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Table J.7-6 (Continued)

B-PM.CMD		Tue Nov 5, 1996 12:31:19				B-PM.CMD				Tue Nov 5, 1996 12:31:19				Page 3-5			
		Page 3-4															
		FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR				Minimum Marine/Minimum Rail Alternative				Minimum Marine/Minimum Rail Alternative			
		PM Peak Hour				PM Peak Hour				PM Peak Hour				PM Peak Hour			
Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total
Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume	Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume	Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume
#204						#244											
Base	0	0	0	0	0	Base	0	0	0	0	0	Base	0	0	0	0	0
Added	0	0	0	0	0	Added	0	0	0	0	0	Added	0	0	0	0	0
Total	0	0	0	0	0	Total	0	0	0	0	0	Total	0	0	0	0	0
#207																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#214																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#217																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#218																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#219																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#220																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#225																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#226																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												

Table J.7-6 (Continued)

B-PM.CMD			Tue Nov 5, 1996 12:31:19												Page 4-1		
FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour																	
Link Volume Report PM Peak Hour																	
Volume		NB Link			SB Link			EB Link			WB Link			Total			
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total		
#3 Maritime St./ Burma St.																	
Base	595	159	754	109	590	699	50	5	55	0	0	0	0	0	1508		
Added	362	230	593	352	564	916	201	122	323	0	0	0	0	0	1833		
Total	957	389	1347	461	1154	1615	251	127	378	0	0	0	0	0	3341		
#4 Maritime St./ 14th St.																	
Base	442	224	666	237	704	941	0	0	0	382	133	515	2122	0	2122		
Added	517	513	1031	230	362	593	505	377	882	0	0	0	2505	0	2505		
Total	959	737	1697	467	1066	1534	505	377	882	382	133	515	4627	0	4627		
#5 Maritime St./ 7th St. Extension																	
Base	36	74	110	75	223	298	297	111	408	0	0	0	816	0	816		
Added	680	731	1411	513	517	1031	355	300	654	0	0	0	3097	0	3097		
Total	716	805	1521	588	740	1329	652	411	1062	0	0	0	3913	0	3913		
#6 7th St./ 7th St. Extension																	
Base	0	37	37	49	0	49	19	0	19	0	31	31	136	0	136		
Added	243	217	460	731	680	1411	719	497	1217	742	1041	1783	4872	0	4872		
Total	243	254	497	780	680	1460	738	497	1236	742	1072	1814	5008	0	5008		
#7 Middle Harbor Rd. / Gate 2																	
Base	324	225	549	0	0	0	346	183	529	182	444	626	1704	0	1704		
Added	310	138	447	0	0	0	206	220	426	350	508	858	1731	0	1731		
Total	634	363	996	0	0	0	552	403	955	532	952	1484	3435	0	3435		
#8 Adeline St./ 3rd St.																	
Base	158	102	260	58	108	166	57	90	147	206	179	385	958	0	958		
Added	891	570	1462	570	891	1462	0	0	0	0	0	0	2923	0	2923		
Total	1049	672	1722	628	999	1628	57	90	147	206	179	385	3881	0	3881		
#9 7th/New Middle Harbor																	
Base	0	0	0	0	1	1	1	0	0	1	0	1	2	0	2		
Added	127	95	223	0	0	0	592	402	994	497	719	1217	2434	0	2434		
Total	127	95	223	0	1	1	592	402	994	498	719	1218	2436	0	2436		
#10																	
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Added	127	132	260	0	0	0	302	310	612	220	206	426	1298	0	1298		
Total	127	132	260	0	0	0	302	310	612	220	206	426	1298	0	1298		
#12 Maritime St./ W. Grand Ave./ I-880 Ramps																	
Base	23	233	256	55	56	111	684	647	1331	637	463	1100	2798	0	2798		
Added	564	352	916	0	0	0	258	435	693	95	129	224	1833	0	1833		
Total	587	585	1172	55	56	111	942	1082	2024	732	592	1324	4631	0	4631		

B-PM.CMD			Tue Nov 5, 1996 12:31:19												Page 4-2		
FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour																	
Link Volume Report PM Peak Hour																	
Volume		NB Link			SB Link			EB Link			WB Link			Total			
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total		
#13 Adeline St./ 5th St./ I-880 SB Ramp																	
Base	0	0	0	310	754	1064	295	271	566	818	398	1216	2846	0	2846		
Added	891	570	1462	102	172	274	105	186	291	363	533	897	2923	0	2923		
Total	891	570	1462	412	926	1338	400	457	857	1181	931	2113	5769	0	5769		
#14 Union St./ 5th St./ I-880 North Ramps																	
Base	475	194	669	174	259	433	146	61	207	97	378	475	1784	0	1784		
Added	105	186	291	0	0	0	0	0	0	186	105	291	582	0	582		
Total	580	380	960	174	259	433	146	61	207	283	483	766	2366	0	2366		
#15 7th St./ I-880 NB Ramps / Frontage Rd.																	
Base	200	0	200	207	198	405	108	258	366	54	113	167	1138	0	1138		
Added	466	0	466	266	378	644	396	742	1139	11	18	29	2377	0	2377		
Total	666	0	666	473	576	1049	504	1000	1505	65	131	196	3415	0	3415		
#16 7th St./ I-880 SB Ramps																	
Base	0	385	385	0	0	0	7	0	7	378	0	378	770	0	770		
Added	0	645	645	0	0	0	1041	742	1783	742	396	1139	3566	0	3566		
Total	0	1030	1030	0	0	0	1048	742	1790	1120	396	1517	4336	0	4336		
#17 14th St./ I-880 Frontage Rd.																	
Base	192	115	307	4	69	73	0	0	0	122	134	256	636	0	636		
Added	378	266	644	266	378	644	0	0	0	0	0	0	1288	0	1288		
Total	570	381	951	270	447	717	0	0	0	122	134	256	1924	0	1924		
#18 W. Grand Ave./ I-880 Frontage Rd.																	
Base	147	3	150	765	488	1253	366	537	903	786	1036	1822	4128	0	4128		
Added	378	266	644	168	229	397	129	95	224	193	278	470	1735	0	1735		
Total	525	269	794	933	717	1650	495	632	1127	979	1314	2292	5863	0	5863		
#134																	
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Added	102	122	223	0	0	0	253	178	431	300	355	654	1309	0	1309		
Total	102	122	223	0	0	0	253	178	431	300	355	654	1309	0	1309		
#138																	
Base	-168	-123	-291	-147	-188	-335	-20	-24	-44	0	0	0	-670	0	-670		
Added	82	55	137	91	113	204	31	36	67	0	0	0	408	0	408		
Total	-86	-68	-154	-56	-75	-131	11	12	-23	0	0	0	-262	0	-262		
#158																	
Base	-422	0	-422	0	-259	-259	0	0	0	0	-163	-163	-844	0	-844		
Added	488	0	488	0	309	309	0	0	0	0	179	179	975	0	975		
Total	66	0	66	0	50	50	0	0	0	0	16	16	131	0	131		

Table J.7-6 (Continued)

B-PM.CMD				Tue Nov 5, 1996 12:31:19												Page 4-3											
FISCO/Port Vision 2000 EIS/EIR Minimum Marine/Minimum Rail Alternative PM Peak Hour																											
Volume		NB Link		SB Link		EB Link		WB Link		Total		Volume		NB Link		SB Link		EB Link		WB Link		Total					
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	Type	In	Out	Total	In	Out	Total	In	Out	Total	Type	In	Out	Total	
#159													#204														
Base	-259	0	-259	0	0	0	0	-364	-364	-105	0	-105	-728	Base	0	-668	-668	-1043	0	-1043	0	0	0	0	-375	-375	-2086
Added	309	0	309	0	0	0	0	423	423	114	0	114	846	Added	0	763	763	1178	0	1178	0	0	0	0	415	415	2356
Total	50	0	50	0	0	0	0	59	59	9	0	9	118	Total	0	95	95	135	0	135	0	0	0	0	40	40	270
#160													#207														
Base	0	-105	-105	0	0	0	0	-259	-259	-364	0	-364	-728	Base	-463	0	-463	0	-741	-741	0	0	0	-278	0	-278	-1482
Added	0	114	114	0	0	0	0	309	309	423	0	423	846	Added	521	0	521	0	829	829	0	0	0	308	0	308	1659
Total	0	9	9	0	0	0	0	50	50	59	0	59	118	Total	58	0	58	0	88	88	0	0	0	30	0	30	177
#161													#214														
Base	0	-255	-255	-105	0	-105	-150	0	-150	0	0	0	-510	Base	0	-350	-350	0	0	0	0	-391	-391	-741	0	-741	-1482
Added	0	287	287	114	0	114	173	0	173	0	0	0	573	Added	0	363	363	0	0	0	0	466	466	829	0	829	1659
Total	0	32	32	9	0	9	23	0	23	0	0	0	63	Total	0	13	13	0	0	0	0	75	75	88	0	88	177
#165													#217														
Base	0	-660	-660	-126	0	-126	-534	0	-534	0	0	0	-1320	Base	0	-19	-19	-19	0	-19	-47	0	-47	0	-47	-47	-132
Added	0	750	750	105	0	105	645	0	645	0	0	0	1499	Added	0	15	15	15	0	15	61	0	61	0	61	61	151
Total	0	90	90	-21	0	-21	111	0	111	0	0	0	179	Total	0	-4	-4	-4	0	-4	14	0	14	0	14	14	19
#170													#218														
Base	-596	0	-596	0	-205	-205	0	0	0	0	-391	-391	-1192	Base	-39	0	-39	0	-70	-70	-47	0	-47	0	-16	-16	-172
Added	652	0	652	0	186	186	0	0	0	0	466	466	1304	Added	33	0	33	0	75	75	61	0	61	0	18	18	187
Total	56	0	56	0	-19	-19	0	0	0	0	75	75	112	Total	-6	0	-6	0	5	5	14	0	14	0	2	2	15
#177													#219														
Base	0	-214	-214	0	-214	-214	0	-163	-163	0	-163	-163	-754	Base	-70	0	-70	0	-70	-70	0	-5	-5	0	-5	-150	
Added	0	244	244	0	244	244	0	179	179	0	179	179	845	Added	75	0	75	0	75	75	0	5	5	0	5	5	161
Total	0	30	30	0	30	30	16	0	16	0	16	16	91	Total	5	0	5	0	5	5	0	0	0	0	0	0	11
#178													#220														
Base	-323	0	-323	0	-439	-439	-163	0	-163	0	-47	-47	-972	Base	-19	-19	-19	-37	0	-37	0	-23	-23	-5	0	-5	-84
Added	363	0	363	0	481	481	179	0	179	0	61	61	1083	Added	0	15	15	40	0	40	0	31	31	5	0	5	91
Total	40	0	40	0	42	42	16	0	16	0	14	14	111	Total	0	-4	-4	3	0	3	0	8	8	0	0	0	7
#182													#225														
Base	-439	0	-439	-297	-439	-736	0	-297	-297	0	0	0	-1472	Base	0	0	0	0	-5	-5	0	-278	-278	0	-283	0	-566
Added	481	0	481	327	481	808	0	327	327	0	0	0	1615	Added	0	0	0	0	5	5	0	308	308	314	0	314	627
Total	42	0	42	30	42	72	0	30	30	0	0	0	143	Total	0	0	0	0	0	0	0	30	30	31	0	31	61
#201													#226														
Base	0	0	0	0	0	0	-1043	0	-1043	0	-1043	-1043	-208	Base	0	0	0	-16	0	-16	-375	0	-375	0	-391	-391	-782
Added	0	0	0	0	0	0	1178	0	1178	0	1178	1178	2356	Added	0	0	0	18	0	18	415	0	415	0	433	433	866
Total	0	0	0	0	0	0	135	0	135	0	135	135	270	Total	0	0	0	2	0	2	40	0	40	0	42	42	84

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Table J.7-6 (Continued)

B-PM.CMD												Tue Nov 5, 1996 12:31:19												Page 4-5				B-PM.CMD												Tue Nov 5, 1996 12:31:20												Page 5-1			

Table J.7-6 (Continued)

B-PM.CMD		Tue Nov 5, 1996 12:31:20		B-PM.CMD		Tue Nov 5, 1996 12:31:20		Page 6-1		Page 7-1	
		FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		PM Peak Hour	
		Level Of Service Computation Report		Level Of Service Computation Report		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		Intersection #4 Maritime St. / 14th St.	
		Cycle (sec): 100		Cycle (sec): 100		Loss Time (sec): 8 (Y+R = 4 sec)		Loss Time (sec): 8 (Y+R = 4 sec)		Optimal Cycle: 73	
		Level Of Service: B		Level Of Service: C		Critical Vol./Cap. (X): 0.320		Critical Vol./Cap. (X): 0.831		Average Delay (sec/veh): 10.0	
		Approach: North Bound		Approach: North Bound		Movement: L - T - R		Movement: L - T - R		Control: Protected Include	
		Rights: 10 20 20		Rights: 10 20 20		Lanes: 1 0 1 0		Lanes: 1 0 1 0		Permitted Include	
		Volume Module:		Volume Module:		Base Vol: 5 590		Base Vol: 0 414		Growth Adj: 1.00 1.00	
		Initial Bse: 5 590		Initial Bse: 0 414		Added Vol: 0 362		Added Vol: 285 232		PasserByVol: 0 0	
		Initial Fut: 5 952		Initial Fut: 285 646		User Adj: 1.00 1.00		User Adj: 1.00 1.00		PHF Adj: 1.00 1.00	
		PHF Volume: 5 952		PHF Volume: 285 646		Reduced Vol: 0 0		Reduced Vol: 0 0		PCE Adj: 1.00 1.00	
		MLF Adj: 1.00 1.05		MLF Adj: 1.00 1.05		Final Vol: 5 1000		Final Vol: 285 678		Saturation Flow Module:	
		Sat/Lane: 1900 1900		Sat/Lane: 1900 1900		Adjustment: 0.95 1.00		Adjustment: 0.95 0.99		Lanes: 1.00 2.00	
		Final Sat: 1805 3800		Final Sat: 1805 3608		Capacity Analysis Module:		Vol/Sat: 0.00 0.26		Green/Cycle: 0.24 0.62	
		Level Of Service Module:		Level Of Service Module:		Delay/Veh: 18.7 6.4		Delay/Veh: 48.1 25.0		User DelAdj: 1.00 1.00	
		Queue: 0 14		Queue: 10 18		AdjDel/Veh: 18.7 6.4		AdjDel/Veh: 48.1 25.0		Queue: 0 14	

Table J.7-6 (Continued)

B-PM.CMD	Tue Nov 5, 1996 12:31:20	Page 8-1
FISCO/Port Vision 2000 EIS/EIR		
Minimum Marine/Minimum Rail Alternative		
PM Peak Hour		
Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		
Intersection #5 Maritime St./ 7th St. Extension		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.375
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh): 12.0
Optimal Cycle:	48	Level Of Service: B
Approach: North Bound South Bound East Bound West Bound		
Movement: L - T - R L - T - R L - T - R L - T - R		
Control:	Protected	Protected
Rights:	Include	Ovl
Min. Green:	10 20 0 0 20 20 10 0 20 0 20 0 0 0	
Lanes:	2 0 2 0 0 0 2 0 1 2 0 0 1 0 0 0 0	
Volume Module:		
Base Vol:	36 0 0 0 75 223 0 74 0 0 0	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	36 0 0 0 75 223 0 74 0 0 0	
Added Vol:	236 445 0 0 449 64 73 0 282 0 0 0 0	
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0	
Initial Fut:	272 445 0 0 449 139 296 0 356 0 0 0	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	272 445 0 0 449 139 296 0 356 0 0 0	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	272 445 0 0 449 139 296 0 356 0 0 0	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.03 1.05 1.00 1.00 1.05 1.00 1.03 1.00 1.00 1.00 1.00	
Final Vol:	280 467 0 0 472 139 305 0 356 0 0 0	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	0.95 1.00 1.00 1.00 0.85 0.95 1.00 0.85 1.00 1.00 1.00	
Lanes:	2.00 2.00 0.00 0.00 2.00 1.00 2.00 0.00 1.00 0.00 0.00 0.00	
Final Sat:	3610 3800 0 0 3800 1615 3610 0 1615 0 0 0	
Capacity Analysis Module:		
Vol/Sat:	0.08 0.12 0.00 0.00 0.12 0.09 0.08 0.00 0.22 0.00 0.00 0.00	
Crit Moves:	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	
Green/Cycle:	0.22 0.58 0.00 0.00 0.35 0.70 0.34 0.00 0.57 0.00 0.00 0.00	
Volume/Cap:	0.35 0.21 0.00 0.00 0.35 0.12 0.25 0.00 0.39 0.00 0.00 0.00	
Level Of Service Module:		
Delay/Veh:	21.3 6.6 0.0 0.0 15.4 3.2 15.2 0.0 8.0 0.0 0.0 0.0	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	21.3 6.6 0.0 0.0 15.4 3.2 15.2 0.0 8.0 0.0 0.0 0.0	
Queue:	7 6 0 0 10 1 6 0 6 0 0 0	

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B-PM.CMD	Tue Nov 5, 1996 12:31:20	Page 9-1
FISCO/Port Vision 2000 EIS/EIR		
Minimum Marine/Minimum Rail Alternative		
PM Peak Hour		
Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		
Intersection #6 7th St./ 7th St. Extension		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.585
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh): 20.1
Optimal Cycle:	68	Level Of Service: C
Approach: North Bound South Bound East Bound West Bound		
Movement: L - T - R L - T - R L - T - R L - T - R		
Control:	Protected	Protected
Rights:	Include	Ovl
Min. Green:	10 20 20 10 20 20 10 20 20 0 20 20	
Lanes:	1 0 1 1 0 1 0 1 1 0 1 0 2 1 0 2 0 1	
Volume Module:		
Base Vol:	0 0 0 31 18 0 0 0 0 19 0 0	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	0 0 0 31 18 0 0 0 0 19 0 0	
Added Vol:	47 142 53 498 121 112 173 489 57 40 338 365	
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut:	47 142 53 529 139 112 173 489 76 40 338 365	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	47 142 53 529 139 112 173 489 76 40 338 365	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	47 142 53 529 139 112 173 489 76 40 338 365	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.00 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.10 1.10 1.00 1.05	
Final Vol:	47 149 56 529 146 118 173 538 83 40 355 365	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	0.95 0.96 0.96 0.95 0.93 0.93 0.95 0.98 0.98 0.95 1.00 0.85	
Lanes:	1.00 1.45 0.55 1.00 1.11 0.89 1.00 2.60 0.40 1.00 2.00 1.00	
Final Sat:	1805 2651 997 1805 1954 1580 1805 4839 747 1805 3800 1615	
Capacity Analysis Module:		
Vol/Sat:	0.03 0.06 0.06 0.29 0.07 0.07 0.10 0.11 0.11 0.02 0.09 0.23	
Crit Moves:	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	
Green/Cycle:	0.20 0.20 0.20 0.39 0.39 0.39 0.13 0.20 0.20 0.13 0.20 0.59	
Volume/Cap:	0.13 0.28 0.28 0.75 0.19 0.19 0.75 0.56 0.56 0.17 0.47 0.38	
Level Of Service Module:		
Delay/Veh:	21.4 22.0 22.0 20.0 12.8 12.8 35.6 23.7 23.7 25.1 23.1 7.1	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	21.4 22.0 22.0 20.0 12.8 12.8 35.6 23.7 23.7 25.1 23.1 7.1	
Queue:	1 4 1 13 3 2 5 14 2 1 9 5	

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Table J.7-6 (Continued)

B-PM.CMD		Tue Nov 5, 1996 12:31:20		Page 10-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 11-1	
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		PM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #7 Middle Harbor Rd. / Gate 2		Intersection #8 Adeline St. / 3rd St.		Intersection #9 Adeline St. / 3rd St.	
Cycle (sec):	100	Cycle (sec):	100	Cycle (sec):	100
Loss Time (sec):	0 (V+R = 4 sec)	Loss Time (sec):	12 (V+R = 4 sec)	Loss Time (sec):	12 (V+R = 4 sec)
Optimal Cycle:	116	Optimal Cycle:	92	Optimal Cycle:	92
Approach:	North Bound	Approach:	North Bound	Approach:	North Bound
Movement:	L - T - R	Movement:	L - T - R	Movement:	L - T - R
Control:	Protected	Control:	Protected	Control:	Protected
Rights:	Include	Rights:	Include	Rights:	Include
Min. Green:	10 0 0 20	Min. Green:	10 20 20	Min. Green:	10 20 20
Lanes:	1 0 0 1	Lanes:	0 1 0 1	Lanes:	0 1 0 1
Volume Module:		Volume Module:		Volume Module:	
Base Vol:	95 0 229 0	Base Vol:	36 0 122 43	Base Vol:	36 0 122 43
Growth Adj:	1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00
Initial Bse:	95 0 229 0	Initial Bse:	36 0 122 43	Initial Bse:	36 0 122 43
Added Vol:	6 0 304 0	Added Vol:	0 891 0 0	Added Vol:	0 891 0 0
PasserByVol:	76 0 106 0	PasserByVol:	0 0 0 0	PasserByVol:	0 0 0 0
Initial Fut:	177 0 639 0	Initial Fut:	36 891 122 43	Initial Fut:	36 891 122 43
User Adj:	1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00
PHF Volume:	177 0 639 0	PHF Volume:	36 891 122 43	PHF Volume:	36 891 122 43
Reduct Vol:	0 0 0 0	Reduct Vol:	0 0 0 0	Reduct Vol:	0 0 0 0
Reduced Vol:	177 0 639 0	Reduced Vol:	36 891 122 43	Reduced Vol:	36 891 122 43
PCE Adj:	1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00 1.00	MLF Adj:	1.05 1.05 1.05 1.05	MLF Adj:	1.05 1.05 1.05 1.05
Final Vol:	177 0 639 0	Final Vol:	38 936 128 45	Final Vol:	38 936 128 45
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:	1900 1900	Sat/Lane:	1900 1900	Sat/Lane:	1900 1900
Adjustment:	0.95 1.00 0.85	Adjustment:	0.98 0.98 0.98	Adjustment:	0.98 0.98 0.98
Lanes:	1.00 0.00 1.00 0.00	Lanes:	0.07 1.70 0.23 0.14	Lanes:	0.07 1.70 0.23 0.14
Final Sat:	1805 0 1615 0	Final Sat:	128 3163 433 259	Final Sat:	128 3163 433 259
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:	0.10 0.00 0.40 0.00	Vol/Sat:	0.30 0.30 0.30	Vol/Sat:	0.30 0.30 0.30
Crit Moves:	0.49 0.00 0.49 0.00	Crit Moves:	0.28 0.28 0.28	Crit Moves:	0.28 0.28 0.28
Green/Cycle:	0.20 0.00 0.80 0.00	Green/Cycle:	1.06 1.06 1.06	Green/Cycle:	1.06 1.06 1.06
Volume/Cap:	0.20 0.00 0.80 0.00	Volume/Cap:	0.87 0.87 0.87	Volume/Cap:	0.87 0.87 0.87
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh:	9.2 0.0 17.9 0.0	Delay/Veh:	61.2 61.2 61.2	Delay/Veh:	61.2 61.2 61.2
User DelAdj:	1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00
AdjDel/Veh:	9.2 0.0 17.9 0.0	AdjDel/Veh:	61.2 61.2 61.2	AdjDel/Veh:	61.2 61.2 61.2
Queue:	3 0 16 0	Queue:	3 39 7 2	Queue:	3 39 7 2

Table J.7-6 (Continued)

B-PM.CMD		Tue Nov 5, 1996 12:31:20		B-PM.CMD		Tue Nov 5, 1996 12:31:20		Page 12-1		Page 13-1	
		FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		PM Peak Hour	
		Level Of Service Computation Report		Level Of Service Computation Report		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps	
		Cycle (sec): 100		Cycle (sec): 100		Critical Vol./Cap. (X): 0.321		Critical Vol./Cap. (X): 0.440		Loss Time (sec): 8 (Y+R = 4 sec)	
		Loss Time (sec): 8 (Y+R = 4 sec)		Loss Time (sec): 10 (Y+R = 4 sec)		Average Delay (sec/veh): 9.7		Average Delay (sec/veh): 19.0		Optimal Cycle: 58	
		Optimal Cycle: 58		Optimal Cycle: 70		Level Of Service: H		Level Of Service: C			
		Approach: North Bound		Approach: North Bound		South Bound		South Bound		East Bound	
		Movement: L - T - R		Movement: L - T - R		L - T - R		L - T - R		L - T - R	
		Control: Protected		Control: Protected		Protected		Protected		Protected	
		Rights: Include		Rights: Include		Include		Include		Include	
		Min. Green: 10 0 20		Min. Green: 10 20 20		10 20 20		10 20 20		10 20 20	
		Lanes: 1 0 0 0 1		Lanes: 2 0 0 1 0		1 0 0 1 0		1 0 0 1 0		1 0 1 1	
		Volume Module:		Volume Module:		Base Vol:		Base Vol:		Growth Adj:	
		Base Vol:		Base Vol:		0 0 0 0 0		0 23 0		0 23 23	
		Growth Adj:		Growth Adj:		1.00 1.00 1.00		1.00 1.00 1.00		1.00 1.00 1.00	
		Initial Bse:		Initial Bse:		0 0 0 0 0		0 23 0		0 23 23	
		Added Vol:		Added Vol:		0 127 0		0 129 0		0 0 0	
		PasserByVol:		PasserByVol:		0 0 0 0 0		0 0 0 0 0		0 0 0	
		Initial Fut:		Initial Fut:		0 127 0		0 129 9		0 23 23	
		User Adj:		User Adj:		1.00 1.00 1.00		1.00 1.00 1.00		1.00 1.00 1.00	
		PHF Adj:		PHF Adj:		1.00 1.00 1.00		1.00 1.00 1.00		1.00 1.00 1.00	
		PHF Volume:		PHF Volume:		0 127 0		0 129 9		0 23 23	
		Reduced Vol:		Reduced Vol:		0 0 0 0 0		0 0 0 0 0		0 0 0	
		Reduced Vol:		Reduced Vol:		0 127 0		0 129 9		0 23 23	
		PCE Adj:		PCE Adj:		1.00 1.00 1.00		1.00 1.00 1.00		1.00 1.00 1.00	
		MLF Adj:		MLF Adj:		1.00 1.00 1.00		1.00 1.00 1.00		1.00 1.00 1.00	
		Final Vol:		Final Vol:		0 127 0		0 129 9		0 23 23	
		Saturation Flow Module:		Saturation Flow Module:		Sat/Lane:		Sat/Lane:		AdjLanes:	
		Sat/Lane:		Sat/Lane:		1900 1900		1900 1900		1900 1900	
		Adjustment:		Adjustment:		0.85 1.00 1.00		0.87 0.95 0.93		0.92 0.92 0.92	
		Lanes:		Lanes:		1.00 0.00 1.00		2.00 0.15 0.85		1.00 0.50 0.50	
		Final Sat:		Final Sat:		1900 0 1615		3610 250 1403		1805 884 884	
		Capacity Analysis Module:		Capacity Analysis Module:		Vol/Sat:		Vol/Sat:		Crit Moves:	
		Vol/Sat:		Vol/Sat:		0.00 0.00 0.08		0.12 0.09 0.09		0.23 0.29 0.29	
		Crit Moves:		Crit Moves:		0.25 0.00 0.00		0.14 0.20 0.20		0.16 0.37 0.37	
		Green/Cycle:		Green/Cycle:		0.00 0.00 0.32		0.03 0.13 0.13		0.07 0.53 0.53	
		Volume/Cap:		Volume/Cap:		0.00 0.00 0.00		0.00 0.00 0.00		0.00 0.32 0.16	
		Level Of Service Module:		Level Of Service Module:		Delay/Veh:		Delay/Veh:		User DelAdj:	
		Delay/Veh:		Delay/Veh:		0.0 0.0 20.1		22.1 18.1 18.1		23.7 21.2 21.2	
		User DelAdj:		User DelAdj:		1.00 1.00 1.00		1.00 1.00 1.00		1.00 1.00 1.00	
		AdjDel/Veh:		AdjDel/Veh:		0.0 0.0 20.1		22.1 18.1 18.1		23.7 21.2 21.2	
		Queue:		Queue:		0 0 3		11 1 3		0 1 0	

Table J.7-6 (Continued)

B-PM.CMD		Tue Nov 5, 1996 12:31:20		Page 14-1					
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 15-1					
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		PM Peak Hour					
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report					
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)					
Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp		Intersection #14 Union St./ 5th St./ I-880 North Ramps		Intersection #14 Union St./ 5th St./ I-880 North Ramps					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.577	Cycle (sec):	100	Critical Vol./Cap. (X):	0.205		
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	21.0	Loss Time (sec):	11 (Y+R = 4 sec)	Average Delay (sec/veh):	16.2		
Optimal Cycle:	82	Level Of Service:	C	Optimal Cycle:	71	Level Of Service:	C		
Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Split Phase	Control:	Protected	Protected	Protected	Split Phase
Rights:	Ovl	Include	Include	Include	Rights:	Include	Include	Include	Include
Min. Green:	10 20 20	10 20 20	10 10 20	10 20 20	Min. Green:	0 20 20	0 20 20	10 20 20	10 20 20
Lanes:	1 0 1 1 0	1 0 1 1 0	1 1 0 1 0	1 0 0 1 1	Lanes:	0 0 1 1 1	0 0 1 1 0	0 1 0 1 0	1 0 1 1 0
Volume Module:					Volume Module:				
Base Vol:	0 0 241	0 69 138 157	0 0 202 616		Base Vol:	0 194 281	0 144 30	31 97 18	32 31 34
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	0 0 241	0 69 138 157	0 0 202 616		Initial Bse:	0 194 281	0 144 30	31 97 18	32 31 34
Added Vol:	186 172 533	0 102 0 0 105 363	0 0		Added Vol:	0 0 105	0 0 0 0 0	0 0 0 0 0	186 0 0
PasserByVol:	0 0 0	0 0 0 0 0 0	0 0		PasserByVol:	0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0
Initial Fut:	186 172 533	241 102 69 138 157 105 363 202 616			Initial Fut:	0 194 386	0 144 30	31 97 18	218 31 34
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	0.50	User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00	PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	186 172 533	241 102 69 138 157 105 363 202 308			PHF Volume:	0 194 386	0 144 30	31 97 18	218 31 34
Reduced Vol:	0 0 0	0 0 0 0 0 0	0 0		Reduced Vol:	0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0
Reduced Vol:	186 172 533	241 102 69 138 157 105 363 202 308			Reduced Vol:	0 194 386	0 144 30	31 97 18	218 31 34
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00	PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.05	MLF Adj:	1.00 1.10 1.10	1.00 1.05 1.05	1.05 1.05 1.05	1.00 1.00 1.00
Final Vol.:	186 172 533	241 107 72 152 173 116 363 212 323			Final Vol.:	0 213 425	0 151 32	33 102 19	218 31 34
Saturation Flow Module:					Saturation Flow Module:				
Sat/Lane:	1900 1900	1900 1900 1900 1900 1900 1900			Sat/Lane:	1900 1900	1900 1900 1900 1900 1900 1900		
Adjustment:	0.95 1.00 0.85	0.95 0.94 0.94 0.94 0.94 0.91 0.91			Adjustment:	1.00 0.90 0.90	1.00 0.97 0.97 0.97 0.97 0.97 0.85		
Lanes:	1.00 1.00 1.00	1.00 1.20 0.80 1.03 1.18 0.79 1.00 0.79 1.21			Lanes:	0.00 1.00 2.00	0.00 1.65 0.35 0.43 1.32 0.25		
Final Sat.:	1805 1900 1615	1805 2135 1437 1848 2104 1411 1805 1370 2088			Final Sat.:	0 1713 3417	0 3041 645 790 2442 455 1805 1900 1615		
Capacity Analysis Module:					Capacity Analysis Module:				
Vol/Sat:	0.10 0.09 0.33	0.13 0.05 0.05 0.08 0.08 0.08 0.20 0.15 0.15			Vol/Sat:	0.00 0.12 0.12	0.00 0.05 0.05 0.04 0.04 0.04 0.12 0.02 0.02		
Crit Moves:	0.19 0.20 0.49	0.19 0.20 0.20 0.20 0.20 0.20 0.29 0.29 0.29			Crit Moves:	0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00		
Green/Cycle:	0.54 0.45 0.68	0.70 0.25 0.25 0.41 0.41 0.41 0.70 0.54 0.54			Green/Cycle:	0.00 0.35 0.35	0.00 0.35 0.35 0.20 0.20 0.20 0.34 0.34 0.34		
Volume/Cap:	0.19 0.20 0.49	0.19 0.20 0.20 0.20 0.20 0.20 0.29 0.29 0.29			Volume/Cap:	0.00 0.36 0.36	0.00 0.14 0.14 0.21 0.21 0.21 0.36 0.05 0.06		
Level Of Service Module:					Level Of Service Module:				
Delay/Veh:	24.9 22.9 13.8	28.5 21.8 21.8 22.7 22.7 22.7 23.3 19.8 19.8			Delay/Veh:	0.0 15.6 15.6	0.0 14.4 14.4 21.6 21.6 21.6 16.2 14.3 14.4		
User DelAdj:	1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			User DelAdj:	0.0 15.6 15.6	0.0 14.4 14.4 21.6 21.6 21.6 16.2 14.3 14.4		
AdjDel/Veh:	24.9 22.9 13.8	28.5 21.8 21.8 22.7 22.7 22.7 23.3 19.8 19.8			AdjDel/Veh:	0.0 15.6 15.6	0.0 14.4 14.4 21.6 21.6 21.6 16.2 14.3 14.4		
Queue:	5 4 12	7 3 2 4 4 3 10 5 8			Queue:	0 4 9	0 3 1 1 2 0 5 1 1		

Table J.7-6 (Continued)

B-PM.CMD		Tue Nov 5, 1996 12:31:20		Page 16-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 17-1	
Minimum Marine/Minimum Rail Alternative		Minimum Marine/Minimum Rail Alternative		PM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.		Intersection #16 7th St./ I-880 SB Ramps		Intersection #17 7th St./ I-880 SB Ramps	
Cycle (sec): 100		Cycle (sec): 100		Cycle (sec): 100	
Loss Time (sec): 10 (Y+R = 4 sec)		Loss Time (sec): 10 (Y+R = 4 sec)		Loss Time (sec): 10 (Y+R = 4 sec)	
Optimal Cycle: 70		Optimal Cycle: 35		Optimal Cycle: 35	
Level Of Service: C		Level Of Service: B		Level Of Service: B	
Approach: North Bound		Approach: North Bound		Approach: North Bound	
Movement: L - T - R		Movement: L - T - R		Movement: L - T - R	
Control: Protected		Control: Protected		Control: Protected	
Rights: Include		Rights: Include		Rights: Include	
Min. Green: 10 20 20		Min. Green: 0 0 0		Min. Green: 0 0 0	
Lanes: 2 0 0 1 0		Lanes: 0 0 0 0 0		Lanes: 0 0 0 0 0	
Volume Module:		Volume Module:		Volume Module:	
Base Vol:		Base Vol:		Base Vol:	
Growth Adj:		Growth Adj:		Growth Adj:	
Initial Bse:		Initial Bse:		Initial Bse:	
Added Vol:		Added Vol:		Added Vol:	
PasserByVol:		PasserByVol:		PasserByVol:	
Initial Fut:		Initial Fut:		Initial Fut:	
User Adj:		User Adj:		User Adj:	
PHF Adj:		PHF Adj:		PHF Adj:	
PHF Volume:		PHF Volume:		PHF Volume:	
Reduced Vol:		Reduced Vol:		Reduced Vol:	
PCE Adj:		PCE Adj:		PCE Adj:	
MLF Adj:		MLF Adj:		MLF Adj:	
Final Vol:		Final Vol:		Final Vol:	
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:		Sat/Lane:		Sat/Lane:	
Adjustment:		Adjustment:		Adjustment:	
Lanes:		Lanes:		Lanes:	
Final Sat:		Final Sat:		Final Sat:	
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:		Vol/Sat:		Vol/Sat:	
Crit Moves:		Crit Moves:		Crit Moves:	
Green/Cycle:		Green/Cycle:		Green/Cycle:	
Volume/Cap:		Volume/Cap:		Volume/Cap:	
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh:		Delay/Veh:		Delay/Veh:	
User DelAdj:		User DelAdj:		User DelAdj:	
AdjDel/Veh:		AdjDel/Veh:		AdjDel/Veh:	
Queue:		Queue:		Queue:	

Table J.7-6 (Continued)

B-PM.CMD		Tue Nov 5, 1996 12:31:20		B-PM.CMD		Tue Nov 5, 1996 12:31:20		Page 18-1	
		FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Minimum Marine/Minimum Rail Alternative		Page 19-1	
		PM Peak Hour		PM Peak Hour		PM Peak Hour			
		Level of Service Computation Report		Level of Service Computation Report		Level of Service Computation Report			
		1994 HCM Unsignalized Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)			
		Intersection #17 14th St./ I-880 Frontage Rd.		Intersection #18 W.Grand Ave./ I-880 Frontage Rd.		Intersection #18 W.Grand Ave./ I-880 Frontage Rd.			
		Average Delay (sec/veh): 2.2 Worst Case Level of Service: C		Cycle (sec): 100 Critical Vol./Cap. (X): 0.652		Cycle (sec): 100 Critical Vol./Cap. (X): 0.652			
		Approach: North Bound South Bound East Bound West Bound		Approach: North Bound South Bound East Bound West Bound		Approach: North Bound South Bound East Bound West Bound			
		Movement: L T R L T R L T R L T R L T R		Movement: L T R L T R L T R L T R L T R		Movement: L T R L T R L T R L T R L T R			
		Control: Uncontrolled Include Stop Sign		Control: Split Phase Include Protected		Control: Split Phase Include Protected			
		Lanes: 0 0 1 1 0 1 0 2 0 0 0 0 0 0 0 1 0 0 0 1		Lanes: 1 0 1 1 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 1		Lanes: 1 0 1 1 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 1			
		Volume Module:		Volume Module:		Volume Module:			
		Base Vol: 0 62 130 4 0 0 0 0 0 0 115 0 7		Base Vol: 75 72 0 759 0 6 86 277 3 0 456 330		Base Vol: 75 72 0 759 0 6 86 277 3 0 456 330			
		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
		Initial Bse: 0 62 130 4 0 0 0 0 0 0 115 0 7		Initial Bse: 75 72 0 759 0 6 86 277 3 0 456 330		Initial Bse: 75 72 0 759 0 6 86 277 3 0 456 330			
		Added Vol: 0 378 0 0 266 0 0 0 0 0 0 0 0		Added Vol: 0 229 149 0 168 0 0 129 0 98 95 0		Added Vol: 0 229 149 0 168 0 0 129 0 98 95 0			
		PasserbyVol: 0 0 0 0 0 0 0 0 0 0 0 0		PasserbyVol: 0 0 0 0 0 0 0 0 0 0 0 0		PasserbyVol: 0 0 0 0 0 0 0 0 0 0 0 0			
		Initial Fut: 0 440 130 4 266 0 0 0 0 0 115 0 7		Initial Fut: 75 301 149 759 168 6 86 406 3 98 551 330		Initial Fut: 75 301 149 759 168 6 86 406 3 98 551 330			
		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
		PHF Volume: 0 440 130 4 266 0 0 0 0 0 115 0 7		PHF Volume: 75 301 149 759 168 6 86 406 3 98 551 330		PHF Volume: 75 301 149 759 168 6 86 406 3 98 551 330			
		Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0		Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0		Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0			
		Final Vol: 0 440 130 4 266 0 0 0 0 0 115 0 7		Final Vol: 75 301 149 759 168 6 86 406 3 98 551 330		Final Vol: 75 301 149 759 168 6 86 406 3 98 551 330			
		Adjusted Volume Module:		Adjusted Volume Module:		Adjusted Volume Module:			
		Grade: 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%		Grade: 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%		Grade: 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%			
		Cycle/Cars: xxxx xxxx xxxx xxxx xxxx		Cycle/Cars: xxxx xxxx xxxx xxxx xxxx		Cycle/Cars: xxxx xxxx xxxx xxxx xxxx			
		Truck/Comb: xxxx xxxx xxxx xxxx xxxx		Truck/Comb: xxxx xxxx xxxx xxxx xxxx		Truck/Comb: xxxx xxxx xxxx xxxx xxxx			
		PCE Adj: 1.10 1.00 1.00 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10		PCE Adj: 1.10 1.00 1.00 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10		PCE Adj: 1.10 1.00 1.00 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10			
		Cycl/Car PCE: xxxx xxxx xxxx xxxx xxxx		Cycl/Car PCE: xxxx xxxx xxxx xxxx xxxx		Cycl/Car PCE: xxxx xxxx xxxx xxxx xxxx			
		Trck/Cmb PCE: xxxx xxxx xxxx xxxx xxxx		Trck/Cmb PCE: xxxx xxxx xxxx xxxx xxxx		Trck/Cmb PCE: xxxx xxxx xxxx xxxx xxxx			
		Adj Vol.: 0 440 130 4 266 0 0 0 0 0 127 0 8		Adj Vol.: 75 301 149 759 168 6 86 406 3 98 551 330		Adj Vol.: 75 301 149 759 168 6 86 406 3 98 551 330			
		Critical Gap Module:		Critical Gap Module:		Critical Gap Module:			
		MoveUp Time:xxxxx xxxx xxxxx 2.1 xxxx xxxxx xxxxx xxxxx 3.4 xxxx 2.6		MoveUp Time:xxxxx xxxx xxxxx 2.1 xxxx xxxxx xxxxx xxxxx 3.4 xxxx 2.6		MoveUp Time:xxxxx xxxx xxxxx 2.1 xxxx xxxxx xxxxx xxxxx 3.4 xxxx 2.6			
		Critical Op:xxxxx xxxx xxxxx 5.5 xxxx xxxxx xxxxx xxxxx 7.0 xxxx 5.5		Critical Op:xxxxx xxxx xxxxx 5.5 xxxx xxxxx xxxxx xxxxx 7.0 xxxx 5.5		Critical Op:xxxxx xxxx xxxxx 5.5 xxxx xxxxx xxxxx xxxxx 7.0 xxxx 5.5			
		Capacity Module:		Capacity Module:		Capacity Module:			
		Conflict Vol: xxxx xxxx xxxx xxxx xxxx 570 xxxx xxxxx xxxx xxxx 775 xxxx 285		Conflict Vol: xxxx xxxx xxxx xxxx xxxx 570 xxxx xxxxx xxxx xxxx 775 xxxx 285		Conflict Vol: xxxx xxxx xxxx xxxx xxxx 570 xxxx xxxxx xxxx xxxx 775 xxxx 285			
		Potent Cap.: xxxx xxxx xxxx xxxx xxxx 847 xxxx xxxxx xxxx xxxx 338 xxxx 993		Potent Cap.: xxxx xxxx xxxx xxxx xxxx 847 xxxx xxxxx xxxx xxxx 338 xxxx 993		Potent Cap.: xxxx xxxx xxxx xxxx xxxx 847 xxxx xxxxx xxxx xxxx 338 xxxx 993			
		Adj Cap.: xxxx xxxx xxxx xxxx xxxx 1.00 xxxx xxxxx xxxx xxxx 0.99 xxxx 1.00		Adj Cap.: xxxx xxxx xxxx xxxx xxxx 1.00 xxxx xxxxx xxxx xxxx 0.99 xxxx 1.00		Adj Cap.: xxxx xxxx xxxx xxxx xxxx 1.00 xxxx xxxxx xxxx xxxx 0.99 xxxx 1.00			
		Move Cap.: xxxx xxxx xxxx xxxx xxxx 847 xxxx xxxxx xxxx xxxx 337 xxxx 993		Move Cap.: xxxx xxxx xxxx xxxx xxxx 847 xxxx xxxxx xxxx xxxx 337 xxxx 993		Move Cap.: xxxx xxxx xxxx xxxx xxxx 847 xxxx xxxxx xxxx xxxx 337 xxxx 993			
		Level of Service Module:		Level of Service Module:		Level of Service Module:			
		Stopped Del:xxxxx xxxx xxxxx 4.3 xxxx xxxxx xxxxx xxxxx 16.2 xxxx 3.7		Stopped Del:xxxxx xxxx xxxxx 4.3 xxxx xxxxx xxxxx xxxxx 16.2 xxxx 3.7		Stopped Del:xxxxx xxxx xxxxx 4.3 xxxx xxxxx xxxxx xxxxx 16.2 xxxx 3.7			
		LOS by Move: * * * * * A * * * * * C * * * * *		LOS by Move: * * * * * A * * * * * C * * * * *		LOS by Move: * * * * * A * * * * * C * * * * *			
		Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT		Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT		Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT			
		Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx			
		Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx		Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx			
		Shared LOS: *		Shared LOS: *		Shared LOS: *			
		ApproachDel: 0.0 0.1 0.0 0.0 15.5		ApproachDel: 0.0 0.1 0.0 0.0 15.5		ApproachDel: 0.0 0.1 0.0 0.0 15.5			

Table J.7-7

C-AM.CMD										Tue Nov 5, 1996 13:07:09										Page 1-1									
FISCO/Port Vision 2000 EIS/EIR										FISCO/Port Vision 2000 EIS/EIR																			
Maximum Marine/Minimum Rail Alternative										Maximum Marine/Minimum Rail Alternative																			
AM Peak Hour										AM Peak Hour																			
Trip Generation Report										Trip Generation Report																			
Forecast for AM Peak Hour										Forecast for AM Peak Hour																			
Zone #	Subzone	Amount	Units	Rate		Trips		Total % Of		Zone #	Subzone	Amount	Units	Rate		Trips		Total % Of											
				In	Out	In	Out	In	Out					In	Out	In	Out	In	Out	In	Out	In	Out						
1	New Harbor	1135.00	Employees	0.26	0.05	295	57	352	5.5	27	7th St Harbr	1.00	Truck	External	276.00	294.00	276	294	570	8.8									
	Zone 1 Subtotal					295	57	352	5.5		Zone 27 Subtotal						276	294	570	8.8									
3	J.I.T.	208.00	Employees	0.40	0.09	83	19	102	1.6	28	Outer Harbor	1.00	Truck	External	318.00	338.00	318	338	656	10.2									
	Zone 3 Subtotal					83	19	102	1.6		Zone 28 Subtotal						318	338	656	10.2									
4	SP Rail Term	210.00	Employees	0.40	0.09	84	19	103	1.6																				
	Zone 4 Subtotal					84	19	103	1.6	TOTAL							3523	2925	6448	100.0									

Table J.7-7 (Continued)

C-AM.CMD		Tue Nov 5, 1996 13:07:09										Page 3-2		C-AM.CMD		Tue Nov 5, 1996 13:07:09										Page 3-3	
		FISCO/Port Vision 2000 EIS/EIR														FISCO/Port Vision 2000 EIS/EIR											
		Maximum Marine/Minimum Rail Alternative														Maximum Marine/Minimum Rail Alternative											
		AM Peak Hour														AM Peak Hour											
Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total										
Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume	Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume	Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume										
#14 Union St./ 5th St./ I-880 North Ramps																											
Base	0 175 45	0 154 31	24 43 13	205 31 115	836	#160	0 0 0	0 0 0	0 0 0	0 0 0	-178 -180	Base	0 0 0	0 0 0	0 0 0	0 0 0	-358										
Added	0 0 171	0 0 0	0 0 0	92 0 0	263	Added	0 0 0	0 0 0	0 0 0	0 0 0	163 212	Added	0 0 0	0 0 0	0 0 0	0 0 0	375										
Total	0 175 216	0 154 31	24 43 13	297 31 115	1099	Total	0 0 0	0 0 0	0 0 0	0 0 0	-15 32	Total	0 0 0	0 0 0	0 0 0	0 0 0	17										
#15 7th St./ I-880 NB Ramps / Frontage Rd.																											
Base	0 548 21	17 0 94	0 16 0	0 62 1	759	#161	0 0 0	0 -178	0 0 0	0 -286	0 0 0	Base	0 0 0	0 0 0	0 0 0	0 0 0	-464										
Added	575 0 0	0 0 436	383 3 0	0 12 0	1408	Added	0 0 0	0 163	0 0 0	0 375	0 0 0	Added	0 0 0	0 0 0	0 375	0 0 0	538										
Total	575 548 21	17 0 530	383 19 0	0 74 1	2167	Total	0 0 0	0 -15	0 0 0	0 89	0 0 0	Total	0 0 0	0 0 0	0 89	0 0 0	74										
#16 7th St./ I-880 SB Ramps																											
Base	0 0 0	0 0 0	0 0 0	65 0 0	65	#165	0 0 0	0 -227	0 0 0	0 -495	0 0 0	Base	0 0 0	0 0 0	0 0 0	0 0 0	-722										
Added	0 0 0	0 0 0	0 386	478 0 1022	1886	Added	0 0 0	0 171	0 0 0	0 478	0 0 0	Added	0 0 0	0 0 0	0 478	0 0 0	649										
Total	0 0 0	0 0 0	0 386	478 65 1022	1951	Total	0 0 0	0 -56	0 0 0	0 -17	0 0 0	Total	0 0 0	0 0 0	0 -17	0 0 0	-73										
#17 14th St./ I-880 Frontage Rd.																											
Base	0 0 89	30 0 0	0 0 0	140 0 6	265	#170	0 -153 -564	0 0 0	0 0 0	0 0 0	0 0 0	Base	0 0 0	0 0 0	0 0 0	0 0 0	-717										
Added	0 383 0	0 436 0	0 0 0	0 0 0	819	Added	0 92 575	0 0 0	0 0 0	0 0 0	0 0 0	Added	0 92 575	0 0 0	0 0 0	0 0 0	666										
Total	0 383 89	30 436 0	0 0 0	140 0 6	1084	Total	0 -61 11	0 0 0	0 0 0	0 0 0	0 0 0	Total	0 -61 11	0 0 0	0 0 0	0 0 0	-51										
#18 W.Grand Ave./ I-880 Frontage Rd.																											
Base	9 0 678	48 6 65	234 12 0	152 449 1653		#177	0 0 0	0 -351	0 0 -129	0 0 0	0 0 0	Base	0 0 0	0 -129	0 0 0	0 0 0	-480										
Added	0 271 112	0 299 0	0 102 0	137 117 0	1037	Added	0 0 0	0 418	0 0 110	0 0 0	0 0 0	Added	0 0 0	0 110	0 0 0	0 0 0	528										
Total	9 271 112	678 347 6	65 336 12	137 269 449	2690	Total	0 0 0	0 67	0 0 -19	0 0 0	0 0 0	Total	0 0 0	0 -19	0 0 0	0 0 0	48										
#134																											
Base	0 0 0	0 0 0	0 0 0	0 0 0	0	#178	0 -266	0 0 0	0 -104 -25	0 0 0	0 0 0	Base	0 -266	0 0 0	0 -104 -25	0 0 0	-395										
Added	0 0 389	0 0 0	0 247 0	415 297 0	1349	Added	0 335	0 0 0	0 74 36	0 0 0	0 0 0	Added	0 335	0 0 0	0 74 36	0 0 0	444										
Total	0 0 389	0 0 0	0 247 0	415 297 0	1349	Total	0 69	0 0 0	0 -30 11	0 0 0	0 0 0	Total	0 69	0 0 0	0 -30 11	0 0 0	49										
#138																											
Base	0 -156	0 0 -173 -26	0 0 0	0 0 0	-379	#182	0 -370	0 0 0	0 -475	0 0 0	0 0 0	Base	0 -370	0 0 0	0 -475	0 0 0	-845										
Added	0 0 0	0 0 0	0 0 0	0 0 0	0	Added	0 408	0 0 0	0 513	0 0 0	0 0 0	Added	0 408	0 0 0	0 513	0 0 0	921										
Total	0 -156	0 0 -173 -26	0 0 0	0 0 0	-379	Total	0 38	0 0 0	0 38	0 0 0	0 0 0	Total	0 38	0 0 0	0 38	0 0 0	76										
#158																											
Base	0 -180 -129	0 0 0	0 0 0	0 0 0	-309	#201	0 0 0	0 0 0	0 0 0	0 -932	0 0 0	Base	0 0 0	0 0 0	0 -932	0 0 0	-932										
Added	0 212 110	0 0 0	0 0 0	0 0 0	322	Added	0 0 0	0 0 0	0 0 0	0 1051	0 0 0	Added	0 0 0	0 0 0	0 1051	0 0 0	1051										
Total	0 32 -19	0 0 0	0 0 0	0 0 0	13	Total	0 0 0	0 0 0	0 0 0	0 119	0 0 0	Total	0 0 0	0 0 0	0 119	0 0 0	119										
#159																											
Base	-180 0 0	0 0 0	0 0 0	0 -178 0	-358	#204	0 0 0	0 -352 -580	0 0 0	0 0 0	0 0 0	Base	0 0 0	0 -352 -580	0 0 0	0 0 0	-932										
Added	212 0 0	0 0 0	0 0 0	0 163 0	375	Added	0 0 0	0 393 658	0 0 0	0 0 0	0 0 0	Added	0 0 0	0 393 658	0 0 0	0 0 0	1051										
Total	32 0 0	0 0 0	0 0 0	0 -15 0	17	Total	0 0 0	0 41 78	0 0 0	0 0 0	0 0 0	Total	0 0 0	0 41 78	0 0 0	0 0 0	119										

Table J.7-7 (Continued)

C-AM.CMD				Tue Nov 5, 1996 13:07:09				C-AM.CMD				Tue Nov 5, 1996 13:07:09				Page 4-1			
				Page 3-4															
				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR				Maximum Marine/Minimum Rail Alternative				Maximum Marine/Minimum Rail Alternative			
				AM Peak Hour				AM Peak Hour				AM Peak Hour				AM Peak Hour			
				Northbound				Southbound				Eastbound				Westbound			
				Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
				Volume	Northbound	Southbound	Eastbound	Westbound	Left	Thru	Right	Volume	Northbound	Southbound	Eastbound	Westbound	Left	Thru	Right
				Type	Left	Thru	Right	Total	Left	Thru	Right	Type	Left	Thru	Right	Total	Left	Thru	Right
#207				Base	0	0	0	0	0	0	0	Base	0	0	0	0	0	0	0
				Added	0	847	0	0	0	0	0	Added	0	847	0	0	0	0	0
				Total	0	133	0	0	0	0	0	Total	0	133	0	0	0	0	0
#214				Base	0	0	0	0	0	0	0	Base	0	0	0	0	0	0	0
				Added	0	0	0	0	0	0	0	Added	0	0	0	0	0	0	0
				Total	0	0	0	0	0	0	0	Total	0	0	0	0	0	0	0
#217				Base	0	0	0	0	0	0	0	Base	0	0	0	0	0	0	0
				Added	0	0	0	0	0	0	0	Added	0	0	0	0	0	0	0
				Total	0	0	0	0	0	0	0	Total	0	0	0	0	0	0	0
#218				Base	0	0	0	0	0	0	0	Base	0	0	0	0	0	0	0
				Added	0	0	0	0	0	0	0	Added	0	0	0	0	0	0	0
				Total	0	0	0	0	0	0	0	Total	0	0	0	0	0	0	0
#219				Base	0	0	0	0	0	0	0	Base	0	0	0	0	0	0	0
				Added	0	0	0	0	0	0	0	Added	0	0	0	0	0	0	0
				Total	0	0	0	0	0	0	0	Total	0	0	0	0	0	0	0
#220				Base	0	0	0	0	0	0	0	Base	0	0	0	0	0	0	0
				Added	0	0	0	0	0	0	0	Added	0	0	0	0	0	0	0
				Total	0	0	0	0	0	0	0	Total	0	0	0	0	0	0	0
#225				Base	0	0	0	0	0	0	0	Base	0	0	0	0	0	0	0
				Added	0	0	0	0	0	0	0	Added	0	0	0	0	0	0	0
				Total	0	0	0	0	0	0	0	Total	0	0	0	0	0	0	0
#226				Base	0	0	0	0	0	0	0	Base	0	0	0	0	0	0	0
				Added	0	0	0	0	0	0	0	Added	0	0	0	0	0	0	0
				Total	0	0	0	0	0	0	0	Total	0	0	0	0	0	0	0
#244				Base	0	0	0	0	0	0	0	Base	0	0	0	0	0	0	0
				Added	0	0	0	0	0	0	0	Added	0	0	0	0	0	0	0
				Total	0	0	0	0	0	0	0	Total	0	0	0	0	0	0	0

Table J.7-7 (Continued)

C-AM.CMD		Tue Nov 5, 1996 13:07:09		Page 6-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 7-1	
Maximum Marine/Minimum Rail Alternative		Maximum Marine/Minimum Rail Alternative			
AM Peak Hour		AM Peak Hour			
Level Of Service Computation Report					
1994 HCM Operations Method (Future Volume Alternative)					
Intersection #3 Maritime St./ Burma St.					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.278		
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	8.5		
Optimal Cycle:	58	Level Of Service:	B		
Intersection #4 Maritime St./ 14th St.					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.819		
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	20.8		
Optimal Cycle:	70	Level Of Service:	C		
Level Of Service Computation Report					
1994 HCM Operations Method (Future Volume Alternative)					
Intersection #4 Maritime St./ 14th St.					
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Protected	Protected	Protected	Protected	
Rights:	Include	Include	Include	Include	
Min. Green:	10 20 20	10 20 20	10 20 20	10 20 20	
Lanes:	1 0 1 1 0	1 0 1 1 0	1 0 1 1 0	1 0 1 1 0	
Volume Module:					
Base Vol:	5 78 0	0 287 0	0 0 5	0 0 0	
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Initial Bse:	5 78 0	0 287 0	0 0 5	0 0 0	
Added Vol:	0 290 0	0 426 177	106 0 0	0 0 0	
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0	
Initial Fut:	5 368 0	0 713 177	106 0 5	0 0 0	
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Volume:	5 368 0	0 713 177	106 0 5	0 0 0	
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0	
Reduced Vol:	5 368 0	0 713 177	106 0 5	0 0 0	
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
MLF Adj:	1.00 1.05 1.05	1.00 1.05 1.05	1.00 1.00 1.00	1.00 1.00 1.00	
Final Vol:	5 386 0	0 749 185	106 0 5	0 0 0	
Saturation Flow Module:					
Sat/Lane:	1900 1900	1900 1900	1900 1900	1900 1900	
Adjustment:	0.95 1.00 1.00	0.97 0.95 1.00	0.85 1.00 1.00	1.00 1.00 1.00	
Lanes:	1.00 2.00 0.00	1.00 1.00 0.40	1.00 0.00 0.00	0.00 0.00 0.00	
Final Sat:	1805 3800	0 1900 2956	730 1805	0 1615	
Capacity Analysis Module:					
Vol/Sat:	0.00 0.10 0.00	0.00 0.25 0.25	0.06 0.00 0.00	0.00 0.00 0.00	
Crit Moves:	0.10 0.48 0.00	0.00 0.62 0.62	0.20 0.00 0.20	0.00 0.00 0.00	
Green/Cycle:	0.03 0.21 0.00	0.00 0.41 0.41	0.29 0.00 0.02	0.00 0.00 0.00	
Volume/Cap:	0.03 0.21 0.00	0.00 0.41 0.41	0.29 0.00 0.02	0.00 0.00 0.00	
Level Of Service Module:					
Delay/Veh:	26.2 9.7 0.0	0.0 6.3 6.3	22.1 0.0 20.7	0.0 0.0 0.0	
User DelAdj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
AdjDel/Veh:	26.2 9.7 0.0	0.0 6.3 6.3	22.1 0.0 20.7	0.0 0.0 0.0	
Queue:	0 6 0	0 11 3	3 0 0	0 0 0	

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Table J.7-7 (Continued)

C-AM.CMD		Tue Nov 5, 1996 13:07:09		Page 8-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 9-1	
Maximum Marine/Minimum Rail Alternative		Maximum Marine/Minimum Rail Alternative		AM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #5 Maritime St./ 7th St. Extension		Intersection #6 7th St./ 7th St. Extension		Intersection #6 7th St./ 7th St. Extension	
Cycle (sec):	100	Cycle (sec):	100	Cycle (sec):	100
Loss Time (sec):	8 (Y+R = 4 sec)	Loss Time (sec):	8 (Y+R = 4 sec)	Loss Time (sec):	8 (Y+R = 4 sec)
Optimal Cycle:	48	Optimal Cycle:	68	Optimal Cycle:	68
Level Of Service:	B	Level Of Service:	C	Level Of Service:	C
Approach:	North Bound	Approach:	North Bound	Approach:	North Bound
Movement:	L - T - R	Movement:	L - T - R	Movement:	L - T - R
Control:	Protected	Control:	Protected	Control:	Protected
Rights:	Include	Rights:	Include	Rights:	Include
Min. Green:	10 20 0 0 20 20	Min. Green:	10 20 20 10 20 20	Min. Green:	10 20 20 10 20 20
Lanes:	2 0 2 0 0 0 2 0 1 2 0 0 1 0 0 0 0	Lanes:	1 0 1 1 0 1 0 1 1 0 1 0 2 1 0 1 0 2 0 1	Lanes:	1 0 1 1 0 1 0 1 1 0 1 0 2 1 0 1 0 2 0 1
Volume Module:		Volume Module:		Volume Module:	
Base Vol:	159 0 0 0 334 69 0 37 0 0 0	Base Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Base Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:	159 0 0 0 334 69 0 37 0 0 0	Initial Bse:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Initial Bse:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Added Vol:	495 493 0 0 561 145 123 0 446 0 0 0	Added Vol:	233 159 49 403 176 428 358 412 248 58 493 471	Added Vol:	233 159 49 403 176 428 358 412 248 58 493 471
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut:	654 493 0 0 561 479 192 0 483 0 0 0	Initial Fut:	233 159 49 403 176 428 358 412 248 58 493 525	Initial Fut:	233 159 49 403 176 428 358 412 248 58 493 525
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:	654 493 0 0 561 479 192 0 483 0 0 0	PHF Volume:	233 159 49 403 176 428 358 412 248 58 493 525	PHF Volume:	233 159 49 403 176 428 358 412 248 58 493 525
Reduc Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Reduc Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Reduc Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol:	654 493 0 0 561 479 192 0 483 0 0 0	Reduced Vol:	233 159 49 403 176 428 358 412 248 58 493 525	Reduced Vol:	233 159 49 403 176 428 358 412 248 58 493 525
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:	1.03 1.05 1.00 1.00 1.05 1.00 1.03 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	MLF Adj:	1.00 1.05 1.05 1.00 1.05 1.00 1.00 1.05 1.00 1.00 1.00 1.05 1.00 1.00 1.00 1.05 1.00 1.00 1.05 1.00	MLF Adj:	1.00 1.05 1.05 1.00 1.05 1.00 1.00 1.05 1.00 1.00 1.00 1.05 1.00 1.00 1.00 1.05 1.00 1.00 1.05 1.00
Final Vol:	673 518 0 0 589 479 198 0 483 0 0 0	Final Vol:	233 167 52 403 176 428 358 432 248 58 518 525	Final Vol:	233 167 52 403 176 428 358 432 248 58 518 525
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:	0.95 1.00 1.00 1.00 0.85 0.95 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Adjustment:	0.95 0.96 0.96 0.95 1.00 0.85 0.95 1.00 0.85 0.95 1.00 0.85 0.95 1.00 0.85 0.95 1.00 0.85 0.95 1.00	Adjustment:	0.95 0.96 0.96 0.95 1.00 0.85 0.95 1.00 0.85 0.95 1.00 0.85 0.95 1.00 0.85 0.95 1.00 0.85 0.95 1.00
Lanes:	2.00 2.00 0.00 0.00 2.00 1.00 2.00 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Lanes:	1.00 1.53 0.47 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Lanes:	1.00 1.53 0.47 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Sat:	3610 3800 0 0 3800 1615 3610 0 1615 0 0 0	Final Sat:	1805 2782 866 1805 1900 1615 1805 3800 1615 1805 3800 1615 1805 3800 1615 1805 3800 1615 1805 3800	Final Sat:	1805 2782 866 1805 1900 1615 1805 3800 1615 1805 3800 1615 1805 3800 1615 1805 3800 1615 1805 3800
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:	0.19 0.14 0.00 0.00 0.15 0.30 0.05 0.00 0.30 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Vol/Sat:	0.13 0.06 0.06 0.22 0.09 0.27 0.20 0.11 0.15 0.03 0.14 0.33	Vol/Sat:	0.13 0.06 0.06 0.22 0.09 0.27 0.20 0.11 0.15 0.03 0.14 0.33
Crit Moves:	***	Crit Moves:	***	Crit Moves:	***
Green/Cycle:	0.35 0.71 0.00 0.00 0.36 0.57 0.21 0.00 0.56 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Green/Cycle:	0.16 0.20 0.20 0.28 0.32 0.32 0.24 0.20 0.20 0.24 0.20 0.20 0.24 0.20 0.20 0.24 0.20 0.20 0.20	Green/Cycle:	0.16 0.20 0.20 0.28 0.32 0.32 0.24 0.20 0.20 0.24 0.20 0.20 0.24 0.20 0.20 0.24 0.20 0.20 0.20
Volume/Cap:	0.54 0.19 0.00 0.00 0.42 0.52 0.26 0.00 0.54 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Volume/Cap:	0.83 0.30 0.30 0.81 0.29 0.83 0.81 0.57 0.77 0.13 0.68 0.68	Volume/Cap:	0.83 0.30 0.30 0.81 0.29 0.83 0.81 0.57 0.77 0.13 0.68 0.68
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh:	17.4 3.1 0.0 0.0 15.6 8.8 21.4 0.0 9.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Delay/Veh:	39.0 22.1 22.1 28.6 16.5 25.9 30.5 23.8 27.3 19.1 25.7 14.9	Delay/Veh:	39.0 22.1 22.1 28.6 16.5 25.9 30.5 23.8 27.3 19.1 25.7 14.9
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:	17.4 3.1 0.0 0.0 15.6 8.8 21.4 0.0 9.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	AdjDel/Veh:	39.0 22.1 22.1 28.6 16.5 25.9 30.5 23.8 27.3 19.1 25.7 14.9	AdjDel/Veh:	39.0 22.1 22.1 28.6 16.5 25.9 30.5 23.8 27.3 19.1 25.7 14.9
Queue:	15 5 0 0 12 8 5 0 9 0 0 0 0 0 0 0 0 0 0	Queue:	8 4 1 12 4 12 11 7 1 14 12	Queue:	8 4 1 12 4 12 11 7 1 14 12

Table J.7-7 (Continued)

C-AM.CMD	Tue Nov 5, 1996 13:07:09	Page 10-1															
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour																	
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)																	
Intersection #7 Middle Harbor/New Middl Hrbr Rd																	
Cycle (sec):	100	Critical Vol./Cap. (X):	0.736														
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	16.8														
Optimal Cycle:	86	Level Of Service:	C														
Approach: North Bound South Bound East Bound West Bound																	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R													
Control:	Protected	Protected	Protected	Protected													
Rights:	Include	Include	Include	Include													
Min. Green:	10 0 0 20	0 0 0 0	0 20 20	10 20 0													
Lanes:	1 0 0 0 1	0 0 0 0	0 0 1 1	0 1 0 2 0 0													
Volume Module:																	
Base Vol:	53	0	45	0	0	0	0	39	208	338	0						
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Initial Bse:	53	0	45	0	0	0	0	39	208	338	0						
Added Vol:	0	0	419	0	0	0	0	205	0	478	343	0					
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0						
Initial Fut:	53	0	464	0	0	0	0	205	39	686	681	0					
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
PHF Volume:	53	0	464	0	0	0	0	205	39	686	681	0					
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0						
Reduced Vol:	53	0	464	0	0	0	0	205	39	686	681	0					
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.05	1.00	1.05						
Final Vol:	53	0	464	0	0	0	0	215	41	686	715	0					
Saturation Flow Module:																	
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900						
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	0.98	0.98	0.95	1.00	1.00						
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	1.68	0.32	1.00	2.00	0.00						
Final Sat:	1805	0	1615	0	0	0	0	3128	596	1805	3800	0					
Capacity Analysis Module:																	
Vol/Sat:	0.03	0.00	0.29	0.00	0.00	0.00	0.07	0.07	0.38	0.19	0.00						
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****						
Green/Cycle:	0.34	0.00	0.34	0.00	0.00	0.00	0.20	0.20	0.46	0.66	0.00						
Volume/Cap:	0.09	0.00	0.83	0.00	0.00	0.00	0.34	0.34	0.83	0.29	0.00						
Level Of Service Module:																	
Delay/Veh:	14.3	0.0	26.8	0.0	0.0	0.0	22.3	22.3	20.7	4.7	0.0						
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
AdjDel/Veh:	14.3	0.0	26.8	0.0	0.0	0.0	22.3	22.3	20.7	4.7	0.0						
Queue:	1	0	13	0	0	0	0	5	1	18	8						

C-AM.CMD	Tue Nov 5, 1996 13:07:09	Page 11-1															
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour																	
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)																	
Intersection #8 Adeline St./ 3rd St.																	
Cycle (sec):	100	Critical Vol./Cap. (X):	0.705														
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	111.2														
Optimal Cycle:	92	Level Of Service:	F														
Approach: North Bound South Bound East Bound West Bound																	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R													
Control:	Split Phase	Split Phase	Split Phase	Split Phase													
Rights:	Include	Include	Include	Include													
Min. Green:	10 20 20	10 20 20	10 20 20	10 20 20													
Lanes:	0 1 0 1 0	0 1 0 1 0	0 1 0 1 0	0 1 0 1 0													
Volume Module:																	
Base Vol:	8	0	31	26	0	26	8	6	29	50	59	56					
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Initial Bse:	8	0	31	26	0	26	8	6	29	50	59	56					
Added Vol:	0	828	0	0	1113	0	0	0	0	0	0	0					
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0					
Initial Fut:	8	828	31	26	1113	26	8	6	29	50	59	56					
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
PHF Volume:	8	828	31	26	1113	26	8	6	29	50	59	56					
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0					
Reduced Vol:	8	828	31	26	1113	26	8	6	29	50	59	56					
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
MLF Adj:	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.00	1.00	1.00	1.05	1.05					
Final Vol:	8	870	33	27	1169	27	8	6	29	53	62	59					
Saturation Flow Module:																	
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900					
Adjustment:	0.99	0.99	0.99	1.00	1.00	1.00	0.97	0.97	0.85	0.94	0.94	0.94					
Lanes:	0.02	1.91	0.07	0.04	1.92	0.04	0.57	0.43	1.00	0.61	0.71	0.68					
Final Sat:	33	3593	136	84	3632	84	1053	790	1615	1089	1273	1212					
Capacity Analysis Module:																	
Vol/Sat:	0.24	0.24	0.24	0.32	0.32	0.32	0.01	0.01	0.02	0.05	0.05	0.05					
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****					
Green/Cycle:	0.21	0.21	0.21	0.27	0.27	0.27	0.20	0.20	0.20	0.20	0.20	0.20					
Volume/Cap:	1.18	1.18	1.18	1.18	1.18	1.18	0.04	0.04	0.09	0.24	0.24	0.24					
Level Of Service Module:																	
Delay/Veh:	123.4	123	123.4	118.0	118	118.0	20.8	20.8	21.1	21.8	21.8	21.8					
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
AdjDel/Veh:	123.4	123	123.4	118.0	118	118.0	20.8	20.8	21.1	21.8	21.8	21.8					
Queue:	1	52	3	3	69	3	0	0	1	1	1	1					

Table J.7-7 (Continued)

C-AM.CMD	Tue Nov 5, 1996 13:07:09	Page 12-1
FISCO/Port Vision 2000 EIS/EIR		
Maximum Marine/Minimum Rail Alternative		
AM Peak Hour		
Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		
Intersection #9 7th/New Middle Harbor		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.810
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh): 20.7
Optimal Cycle:	67	Level Of Service: C
Approach: North Bound South Bound East Bound West Bound		
Movement:	L - T - R L - T - R L - T - R L - T - R	
Control:	Protected Protected Protected Protected	
Rights:	Include Include Include Include	
Min. Green:	10 0 20 0 0 0 0 20 20 10 20 0	
Lanes:	1 0 0 0 1 0 0 0 0 0 1 0 1 0 2 0 0	
Volume Module:		
Base Vol:	0 0 0 0 0 0 0 0 0 0 0 0	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	0 0 0 0 0 0 0 0 0 0 0 0	
Added Vol:	0 0 502 0 0 0 0 517 0 526 628 0	
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut:	0 0 502 0 0 0 0 517 0 526 628 0	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	0 0 502 0 0 0 0 517 0 526 628 0	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	0 0 502 0 0 0 0 517 0 526 628 0	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Final Vol:	0 0 502 0 0 0 0 543 0 526 659 0	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00	
Lanes:	1.00 0.00 1.00 0.00 0.00 0.00 0.00 2.00 0.00 1.00 2.00 0.00	
Final Sat:	1900 0 1615 0 0 0 0 3800 0 1805 3800 0	
Capacity Analysis Module:		
Vol/Sat:	0.00 0.00 0.31 0.00 0.00 0.00 0.00 0.14 0.00 0.29 0.17 0.00	
Crit Moves:	****	
Green/Cycle:	0.00 0.00 0.37 0.00 0.00 0.00 0.00 0.20 0.00 0.35 0.55 0.00	
Volume/Cap:	0.00 0.00 0.84 0.00 0.00 0.00 0.00 0.71 0.00 0.84 0.32 0.00	
Level Of Service Module:		
Delay/Veh:	0.0 0.0 25.5 0.0 0.0 0.0 0.0 26.3 0.0 26.1 8.0 0.0	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	0.0 0.0 25.5 0.0 0.0 0.0 0.0 26.3 0.0 26.1 8.0 0.0	
Queue:	0 0 14 0 0 0 0 15 0 15 10 0	

C-AM.CMD	Tue Nov 5, 1996 13:07:09	Page 13-1
FISCO/Port Vision 2000 EIS/EIR		
Maximum Marine/Minimum Rail Alternative		
AM Peak Hour		
Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		
Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.547
Loss Time (sec):	10 (Y+R = 4 sec)	Average Delay (sec/veh): 17.1
Optimal Cycle:	70	Level Of Service: C
Approach: North Bound South Bound East Bound West Bound		
Movement:	L - T - R L - T - R L - T - R L - T - R	
Control:	Protected Protected Protected Protected	
Rights:	Include Include Include Include	
Min. Green:	10 20 20 10 20 20 10 20 20 10 20 20	
Lanes:	2 0 0 1 0 1 0 0 1 0 1 0 1 1 1 0 1 0	
Volume Module:		
Base Vol:	0 33 0 16 28 47 48 394 438 0 300 9	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	0 33 0 16 28 47 48 394 438 0 300 9	
Added Vol:	294 0 102 0 0 0 0 0 0 486 117 0 0	
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut:	294 33 102 16 28 47 48 394 924 117 300 9	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	294 33 102 16 28 47 48 394 924 117 300 9	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	294 33 102 16 28 47 48 394 924 117 300 9	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.03 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Final Vol:	303 33 102 16 28 47 48 394 970 117 315 9	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	0.95 0.89 0.89 0.95 0.91 0.91 0.95 1.00 0.85 0.95 1.00 1.00	
Lanes:	2.00 0.24 0.76 1.00 0.37 0.63 1.00 1.00 2.00 1.00 1.94 0.06	
Final Sat:	3610 413 1278 1805 645 1084 1805 1900 3230 1805 3694 106	
Capacity Analysis Module:		
Vol/Sat:	0.08 0.08 0.08 0.01 0.04 0.04 0.03 0.21 0.30 0.06 0.09 0.09	
Crit Moves:	****	
Green/Cycle:	0.13 0.22 0.22 0.11 0.20 0.20 0.19 0.47 0.47 0.10 0.38 0.38	
Volume/Cap:	0.64 0.36 0.36 0.08 0.22 0.22 0.14 0.44 0.64 0.64 0.22 0.22	
Level Of Service Module:		
Delay/Veh:	28.7 21.6 21.6 25.8 21.7 21.7 21.8 11.6 13.5 33.0 13.6 13.6	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	28.7 21.6 21.6 25.8 21.7 21.7 21.8 11.6 13.5 33.0 13.6 13.6	
Queue:	8 1 2 0 1 1 1 7 21 3 6 0	

Table J.7-7 (Continued)

C-AM.CMD	Tue Nov 5, 1996 13:07:09	Page 14-1
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)		
Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.789
Loss Time (sec):	12 (V+R = 4 sec)	Average Delay (sec/veh): 28.2
Optimal Cycle:	82	Level Of Service: D
Approach: North Bound South Bound East Bound West Bound		
Movement:	L - T - R L - T - R L - T - R L - T - R	
Control:	Protected Protected Protected Protected	Split Phase
Rights:	Ovl Include Include Include	Include
Min. Green:	10 20 20 10 20 20 10 10 20 10 20 20	
Lanes:	1 0 1 1 0 1 0 1 0 1 0 1 0 1 1	
Volume Module:		
Base Vol:	0 0 72 109 165 256 51 0 0 169 364	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	0 0 72 109 165 256 51 0 0 169 364	
Added Vol:	92 163 573 0 233 0 0 0 171 710 0 0	
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut:	92 163 573 72 342 165 256 51 171 710 169 364	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	92 163 573 72 342 165 256 51 171 710 169 182	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	92 163 573 72 342 165 256 51 171 710 169 182	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.05 1.05 1.00 1.00 1.00 1.05 1.05	
Final Vol:	92 163 573 72 359 173 269 51 171 710 177 191	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	0.95 1.00 0.85 0.95 0.95 0.95 0.88 0.88 0.95 0.92 0.92	
Lanes:	1.00 1.00 1.00 1.00 1.00 1.35 0.65 1.66 0.34 1.00 1.00 0.96 1.04	
Final Sat:	1805 1900 1615 1805 2436 1174 2997 568 1672 1805 1682 1815	
Capacity Analysis Module:		
Vol/Sat:	0.05 0.09 0.35 0.04 0.15 0.15 0.09 0.09 0.10 0.39 0.11 0.11	
Crit Moves:	0.05 0.09 0.35 0.04 0.15 0.15 0.09 0.09 0.10 0.39 0.11 0.11	
Green/Cycle:	0.10 0.20 0.58 0.10 0.20 0.20 0.20 0.20 0.20 0.38 0.38 0.38	
Volume/Cap:	0.51 0.43 0.61 0.40 0.74 0.74 0.45 0.45 0.51 1.04 0.28 0.28	
Level Of Service Module:		
Delay/Veh:	29.5 22.7 9.5 28.0 27.0 27.0 22.9 22.9 23.4 56.1 13.9 13.9	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	29.5 22.7 9.5 28.0 27.0 27.0 22.9 22.9 23.4 56.1 13.9 13.9	
Queue:	3 4 11 2 10 5 7 1 4 29 3 4	

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C-AM.CMD	Tue Nov 5, 1996 13:07:09	Page 15-1
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)		
Intersection #14 Union St./ 5th St./ I-880 North Ramps		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.137
Loss Time (sec):	11 (Y+R = 4 sec)	Average Delay (sec/veh): 17.0
Optimal Cycle:	71	Level Of Service: C
Approach: North Bound South Bound East Bound West Bound		
Movement:	L - T - R L - T - R L - T - R L - T - R	
Control:	Protected Protected Protected Protected	Split Phase
Rights:	Include Include Include Include	Include
Min. Green:	0 20 20 0 20 20 10 20 20 10 20 20	
Lanes:	0 0 1 1 1 0 0 1 1 0 0 1 0 1 0 1 0 1 0	
Volume Module:		
Base Vol:	0 175 45 0 154 31 24 43 13 205 31 115	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	0 175 45 0 154 31 24 43 13 205 31 115	
Added Vol:	0 0 171 0 0 0 0 0 0 0 0 0	
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut:	0 175 216 0 154 31 24 43 13 297 31 115	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume:	0 175 216 0 154 31 24 43 13 297 31 115	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	0 175 216 0 154 31 24 43 13 297 31 115	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.00 1.10 1.10 1.00 1.05 1.05 1.05 1.05 1.05 1.00 1.00 1.00	
Final Vol:	0 193 238 0 162 33 25 45 14 297 31 115	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	1.00 0.92 0.92 1.00 0.97 0.97 0.96 0.96 0.96 0.95 1.00 0.85	
Lanes:	0.00 1.34 1.66 0.00 1.66 0.34 0.60 1.07 0.33 1.00 1.00 1.00	
Final Sat:	0 2348 2896 0 3062 624 1086 1955 608 1805 1900 1615	
Capacity Analysis Module:		
Vol/Sat:	0.00 0.08 0.08 0.00 0.05 0.05 0.02 0.02 0.02 0.16 0.02 0.07	
Crit Moves:	0.00 0.08 0.08 0.00 0.05 0.05 0.02 0.02 0.02 0.16 0.02 0.07	
Green/Cycle:	0.00 0.23 0.23 0.00 0.23 0.23 0.20 0.20 0.20 0.46 0.46 0.46	
Volume/Cap:	0.00 0.36 0.36 0.00 0.23 0.23 0.12 0.12 0.12 0.36 0.04 0.15	
Level Of Service Module:		
Delay/Veh:	0.0 21.0 21.0 0.0 20.3 20.3 21.2 21.2 21.2 11.4 9.6 10.1	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	0.0 21.0 21.0 0.0 20.3 20.3 21.2 21.2 21.2 11.4 9.6 10.1	
Queue:	0 5 6 0 4 1 1 1 0 5 0 2	

Table J.7-7 (Continued)

C-AM.CMD	Tue Nov 5, 1996 13:07:09										Page 16-1																			
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour																														
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)																														
Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.																														
Cycle (sec):	100	Critical Vol./Cap. (X):	0.605																											
Loss Time (sec):	10 (Y+R = 4 sec)	Average Delay (sec/veh):	22.8																											
Optimal Cycle:	70	Level Of Service:	C																											
Approach:	North Bound	South Bound	East Bound	West Bound																										
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R																									
Control:	Protected	Protected	Protected	Protected	Protected																									
Rights:	Include	Include	Include	Include	Include																									
Min. Green:	10	20	20	20	20	10	20	20	0	20	20																			
Lanes:	2	0	0	1	0	1	0	0	0	2	1	0	2	0	0	0	1	1	0											
Volume Module:																														
Base Vol:	0	548	21	17	0	94	0	16	0	0	62	1																		
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
Initial Bse:	0	548	21	17	0	94	0	16	0	0	62	1																		
Added Vol:	575	0	0	0	0	436	383	3	0	0	12	0																		
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0																		
Initial Fut:	575	548	21	17	0	530	383	19	0	0	74	1																		
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
PHF Volume:	575	548	21	17	0	530	383	19	0	0	74	1																		
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0																		
Reduced Vol:	575	548	21	17	0	530	383	19	0	0	74	1																		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
MLF Adj:	1.03	1.00	1.00	1.00	1.00	1.13	1.00	1.05	1.00	1.00	1.05	1.05																		
Final Vol.:	592	548	21	17	0	598	383	20	0	0	77	1																		
Saturation Flow Module:																														
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900																		
Adjustment:	0.95	0.99	0.99	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	1.00																		
Lanes:	2.00	0.96	0.04	1.00	0.00	2.00	1.00	2.00	0.00	0.00	1.97	0.03																		
Final Sat.:	3610	1812	69	1805	0	3230	1805	3800	0	0	3751	49																		
Capacity Analysis Module:																														
Vol/Sat:	0.16	0.30	0.30	0.01	0.00	0.19	0.21	0.01	0.00	0.00	0.02	0.02																		
Crit Moves:	0.25	0.35	0.35	0.10	0.00	0.45	0.25	0.45	0.00	0.00	0.20	0.20																		
Green/Cycle:	0.65	0.86	0.86	0.09	0.00	0.41	0.86	0.01	0.00	0.00	0.10	0.10																		
Volume/Cap:	0.65	0.86	0.86	0.09	0.00	0.41	0.86	0.01	0.00	0.00	0.10	0.10																		
Level Of Service Module:																														
Delay/Veh:	22.7	27.1	27.1	26.4	0.0	12.2	33.9	9.9	0.0	0.0	21.1	21.1																		
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
AdjDel/Veh:	22.7	27.1	27.1	26.4	0.0	12.2	33.9	9.9	0.0	0.0	21.1	21.1																		
Queue:	15	16	1	0	0	11	12	0	0	0	2	0																		

C-AM.CMD	Tue Nov 5, 1996 13:07:09										Page 17-1																			
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour																														
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)																														
Intersection #16 7th St./ I-880 SB Ramps																														
Cycle (sec):	100	Critical Vol./Cap. (X):	0.331																											
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	1.4																											
Optimal Cycle:	35	Level Of Service:	A																											
Approach:	North Bound	South Bound	East Bound	West Bound																										
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R																									
Control:	Protected	Protected	Protected	Protected	Protected																									
Rights:	Include	Include	Include	Include	Include																									
Min. Green:	0	0	0	0	0	0	0	0	0	0	20	20	10	20	20															
Lanes:	0	0	0	0	0	0	0	0	0	0	0	2	0	1	2	0	2	0	0											
Volume Module:																														
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	65	0															
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00															
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0	0	65	0															
Added Vol:	0	0	0	0	0	0	0	0	0	0	386	478	0	1022	0															
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Initial Fut:	0	0	0	0	0	0	0	0	0	0	386	478	65	1022	0															
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00															
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00															
PHF Volume:	0	0	0	0	0	0	0	0	0	0	386	478	65	1022	0															
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	386	478	65	1022	0															
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00															
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.00	1.03	1.05															
Final Vol.:	0	0	0	0	0	0	0	0	0	0	405	478	67	1073	0															
Saturation Flow Module:																														
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900															
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.95	1.00	1.00	1.00															
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	2.00	2.00	0.00															
Final Sat.:	0	0	0	0	0	0	0	0	0	0	3800	1615	3610	3800	0															
Capacity Analysis Module:																														
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.30	0.02	0.28	0.00															
Crit Moves:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.85	0.10	0.95	0.00															
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.35	0.19	0.30	0.00															
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.35	0.19	0.30	0.00															
Level Of Service Module:																														
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.1	26.7	0.1	0.0															
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00															
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.1	26.7	0.1	0.0															
Queue:	0	0	0	0	0	0	0	0	0	0	2	3	2	2	0															

Table J.7-7 (Continued)

C-AM.CMD	Tue Nov 5, 1996 13:07:09	Page 18-1
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour		
Level Of Service Computation Report 1994 HCM Unsignalized Method (Future Volume Alternative)		
Intersection #17 14th St. / I-880 Frontage Rd.		
Average Delay (sec/veh): 3.9 Worst Case Level Of Service: D		
Approach:	North Bound	South Bound
Movement:	L - T - R	L - T - R
Control:	Uncontrolled	Stop Sign
Rights:	Include	Include
Lanes:	0 0 1 1 0	1 0 2 0 0
Volume Module:		
Base Vol:	0 0 89	30 0 0
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	0 0 89	30 0 0
Added Vol:	0 0 383	0 0 436
PasserByVol:	0 0 0	0 0 0
Initial Fut:	0 383	30 436
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 383	30 436
Reduced Vol:	0 0	0 0
Final Vol:	0 383	30 436
Adjusted Volume Module:		
Grade:	0%	0%
\$ Cycle/Cars:	xxxx xxxx	xxxx xxxx
\$ Truck/Comb:	xxxx xxxx	xxxx xxxx
PCE Adj:	1.10 1.00 1.00	1.10 1.00 1.00
Cycl/Car PCE:	xxxx xxxx	xxxx xxxx
Trck/Cmb PCE:	xxxx xxxx	xxxx xxxx
Adj Vol:	0 383	33 436
Critical Gap Module:		
MoveUp Time:xxxx	xxxx	xxxx
Critical Gp:xxxx	xxxx	xxxx
Capacity Module:		
Conflict Vol:	472 xxxx	xxxx
Potent Cap:	xxxx	xxxx
Adj Cap:	xxxx	xxxx
Move Cap:	xxxx	xxxx
Level Of Service Module:		
Stopped Del:xxxx	xxxx	xxxx
LOS by Move:	A	A
Movement:	LT - LTR - RT	LT - LTR - RT
Shared Cap:	xxxx	xxxx
Shrd StpDel:xxxx	xxxx	xxxx
Shared LOS:	*	*
ApproachDel:	0.0	0.3

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J.7-95

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C-AM.CMD	Tue Nov 5, 1996 13:07:09	Page 19-1
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative AM Peak Hour		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)		
Intersection #18 W.Grand Ave./ I-880 Frontage Rd.		
Cycle (sec): 100 Critical Vol./Cap. (X): 0.544		
Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): 21.2		
Optimal Cycle: 81 Level Of Service: C		
Approach:	North Bound	South Bound
Movement:	L - T - R	L - T - R
Control:	Split Phase	Split Phase
Rights:	Include	Include
Lanes:	10 20 20	10 20 20
Volume Module:		
Base Vol:	9 0 0	678 48 6
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	9 0 0	678 48 6
Added Vol:	0 271 112	0 299 0
PasserByVol:	0 0 0	0 0 0
Initial Fut:	9 271 112	678 347 6
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	9 271 112	678 347 6
Reduced Vol:	0 0 0	0 0 0
PCE Adj:	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.05 1.05	1.05 1.00 1.00
Final Vol:	9 285 118	712 347 6
Saturation Flow Module:		
Sat/Lane:	1900 1900	1900 1900 1900
Adjustment:	0.95 0.96	0.96 0.95 1.00
Lanes:	1.00 1.41	0.59 2.00 0.98
Final Sat:	1805 2580 1068	3610 1868 32
Capacity Analysis Module:		
Vol/Sat:	0.00 0.11	0.20 0.19 0.19
Crit Moves:	0.20 0.20	0.33 0.33 0.33
Green/Cycle:	0.02 0.55	0.55 0.59 0.56
Volume/Cap:	0.02 0.55	0.55 0.59 0.56
Level Of Service Module:		
Delay/Veh:	20.8 23.9	23.9 18.3 17.9
User DelAdj:	1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	20.8 23.9	23.9 18.3 17.9
Queue:	0 7 3	17 8 0

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Table J.7-8

C-PM.CMD		Tue Nov 5, 1996 12:31:57		Page 1-1		Page 1-2	
		FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR	
		Maximum Marine/Minimum Rail Alternative		Maximum Marine/Minimum Rail Alternative		Maximum Marine/Minimum Rail Alternative	
		PM Peak Hour		PM Peak Hour		PM Peak Hour	
		Trip Generation Report		Trip Generation Report		Trip Generation Report	
		Forecast for PM Peak Hour		Forecast for PM Peak Hour		Forecast for PM Peak Hour	
Zone #	Subzone	Amount	Units	Rate		Trips	Total % Of
				In	Out	In Out	
1	New Harbor	1135.00	Employees	0.06	0.22	68 250	318 5.6
	Zone 1 Subtotal					68 250	318 5.6
3	J.I.T.	208.00	Employees	0.10	0.36	21 75	96 1.7
	Zone 3 Subtotal					21 75	96 1.7
4	SP Rail Term	210.00	Employees	0.10	0.36	21 76	97 1.7
	Zone 4 Subtotal					21 76	97 1.7
6	Middle Harbr	516.00	Employees	0.06	0.22	31 114	145 2.5
	Zone 6 Subtotal					31 114	145 2.5
7	7th St Harbr	613.00	Employees	0.06	0.22	37 135	172 3.0
	Zone 7 Subtotal					37 135	172 3.0
8	Outer Harbor	706.00	Employees	0.06	0.21	42 148	190 3.3
	Zone 8 Subtotal					42 148	190 3.3
10	New Park	1.00	Total Trips	30.00	59.00	30 59	89 1.6
	Zone 10 Subtotal					30 59	89 1.6
11	New Harbor	1.00	Trucks Inter	246.00	295.00	246 295	541 9.5
	Zone 11 Subtotal					246 295	541 9.5
16	Middle Harbr	1.00	Trucks Inter	112.00	134.00	112 134	246 4.3
	Zone 16 Subtotal					112 134	246 4.3
17	7th St Harbr	1.00	Trucks Inter	133.00	159.00	133 159	292 5.1
	Zone 17 Subtotal					133 159	292 5.1
18	Outer Harbor	1.00	Trucks Inter	153.00	184.00	153 184	337 5.9
	Zone 18 Subtotal					153 184	337 5.9
21	New Harbor	1.00	Truck External	418.00	501.00	418 501	919 16.1
	Zone 21 Subtotal					418 501	919 16.1
23	J.I.T.	1.00	Truck External	175.00	210.00	175 210	385 6.7
	Zone 23 Subtotal					175 210	385 6.7
24	SP Rail Term	1.00	Truck External	178.00	213.00	178 213	391 6.9
	Zone 24 Subtotal					178 213	391 6.9
26	Middle Harbr	1.00	Truck External	190.00	228.00	190 228	418 7.3
TOTAL						2342 3364	5706 100.0

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J.7-96

Table J.7-8 (Continued)

C-PM, CMD	Tue Nov 5, 1996 12:31:57										Tue Nov 5, 1996 12:31:57										Page 2-1										Page 3-1																																		
	FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour										FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour										FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour										FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour																																		
Trip Distribution Report																																																																	
Percent Of Trips Existing																																																																	
Zone	To Gates										To Gates										To Gates										To Gates																																		
	3	4	5	11	12	13	14	15	16		3	4	5	11	12	13	14	15	16		3	4	5	11	12	13	14	15	16		3	4	5	11	12	13	14	15	16																										
1	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0																										
3	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0																										
4	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0																										
6	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0																										
7	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0																										
8	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0		0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0																										
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0																											
11	49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0																											
16	49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0																											
17	49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0																											
18	49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		49.6	50.4	0.0	0.0	0.0	0.0	0.0	0.0																											
21	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0																										
23	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0																										
24	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0																										
26	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0																										
27	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0																										
28	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0		0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0																										

Table J.7-8 (Continued)

C-PM.CMD		Tue Nov 5, 1996 12:31:57										Page 3-2						
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour																		
Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour																		

Table J.7-8 (Continued)

C-PM.CMD		Tue Nov 5, 1996 12:31:57				Page 3-4		C-PM.CMD		Tue Nov 5, 1996 12:31:57				Page 4-1	
		FISCO/Port Vision 2000 EIS/EIR						FISCO/Port Vision 2000 EIS/EIR							
		Maximum Marine/Minimum Rail Alternative						Maximum Marine/Minimum Rail Alternative							
		PM Peak Hour						PM Peak Hour							
		Link Volume Report						Link Volume Report							
		PM Peak Hour						PM Peak Hour							
Volume	Northbound	Southbound	Eastbound	Westbound	Total			Volume	NB Link	SB Link	EB Link	WB Link	Total		
Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Total	In	Out	Type	In	Out	In	Out	Total	In	Out
#207								#3 Maritime St./ Burma St.							
Base	0	0	0	0	0	0	0	Base	595	159	754	109	590	699	50
Added	0	529	0	0	0	0	0	Added	394	238	632	328	551	878	157
Total	0	66	0	0	0	0	0	Total	989	397	1386	437	1141	1577	207
#214								#4 Maritime St./ 14th St.							
Base	0	0	0	0	0	0	0	Base	442	224	666	237	704	941	0
Added	0	0	0	0	0	0	0	Added	599	564	1162	238	394	632	487
Total	0	0	0	0	0	0	0	Total	1041	788	1828	475	1098	1573	487
#217								#5 Maritime St./ 7th St. Extension							
Base	0	0	0	0	0	0	0	Base	36	74	110	75	223	298	297
Added	0	0	0	0	0	0	0	Added	975	876	1751	564	599	1162	549
Total	0	0	0	0	0	0	0	Total	911	950	1861	639	822	1460	846
#218								#6 7th St./ 7th St. Extension							
Base	0	0	0	0	0	0	0	Base	0	37	37	49	0	49	19
Added	0	31	0	0	0	0	0	Added	397	412	808	876	875	1751	1132
Total	0	31	0	0	0	0	0	Total	397	449	845	925	875	1800	1151
#219								#7 Middle Harbor/New Mddl Hrbr Rd							
Base	0	0	0	0	0	0	0	Base	324	225	549	0	0	346	183
Added	0	75	0	0	0	0	0	Added	538	257	795	0	0	217	260
Total	0	75	0	0	0	0	0	Total	862	482	1344	0	0	563	443
#220								#8 Adeline St./ 3rd St.							
Base	0	0	0	0	0	0	0	Base	158	102	260	58	108	166	57
Added	0	0	0	0	0	0	0	Added	1041	670	1711	670	1041	1711	0
Total	0	0	0	0	0	0	0	Total	1199	772	1971	728	1149	1877	57
#225								#9 7th/New Middle Harbor							
Base	0	0	0	0	0	0	0	Base	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	Added	508	391	899	0	0	624	426
Total	0	0	0	0	0	0	0	Total	508	391	899	0	0	624	426
#226								#12 Maritime St./ W.Grand Ave./ I-880 Ramps							
Base	0	0	0	0	0	0	0	Base	23	233	256	55	56	111	684
Added	0	0	0	0	0	0	0	Added	551	328	878	0	0	247	441
Total	0	0	0	0	0	0	0	Total	574	561	1134	55	56	111	931
#244								#13 Adeline St./ 5th St./ I-880 SB Ramp							
Base	0	0	0	0	0	0	0	Base	0	0	0	310	754	1064	295
Added	0	0	0	0	0	0	0	Added	1041	671	1711	134	216	350	79
Total	0	0	0	0	0	0	0	Total	1041	671	1711	444	970	1414	374

Table J.7-8 (Continued)

C-PM.CMD				Tue Nov 5, 1996 12:31:57				Page 4-2				C-PM.CMD				Tue Nov 5, 1996 12:31:57				Page 4-3			
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour												FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour											
Volume	NB Link		SB Link		EB Link		WB Link		Total	Volume	NB Link		SB Link		EB Link		WB Link		Total				
Type	In	Out	Total	In	Out	Total	In	Out	Total	Type	In	Out	Total	In	Out	Total	In	Out	Total				
#14 Union St./ 5th St./ I-880 North Ramps																							
Base	475	194	669	174	259	433	146	61	207	97	378	475	1784										
Added	79	154	233	0	0	0	0	0	0	154	79	233	467										
Total	554	348	902	174	259	433	146	61	207	251	457	708	2251										
#15 7th St./ I-880 NB Ramps / Frontage Rd.																							
Base	200	0	200	207	198	405	108	258	366	54	113	167	1138										
Added	381	0	381	316	447	763	458	700	1158	3	11	13	2315										
Total	581	0	581	523	645	1168	566	958	1524	57	124	180	3453										
#16 7th St./ I-880 SB Ramps																							
Base	0	385	385	0	0	0	7	0	7	378	0	378	770										
Added	0	543	543	0	0	0	1001	700	1700	700	458	1158	3401										
Total	0	928	928	0	0	0	1008	700	1707	1078	458	1536	4171										
#17 14th St./ I-880 Frontage Rd.																							
Base	192	115	307	4	69	73	0	0	0	122	134	256	636										
Added	447	316	763	316	447	763	0	0	0	0	0	0	1527										
Total	639	431	1070	320	516	836	0	0	0	122	134	256	2163										
#18 W. Grand Ave./ I-880 Frontage Rd.																							
Base	147	3	150	765	488	1253	366	537	903	786	1036	1822	4128										
Added	447	316	763	213	288	500	110	81	190	184	270	454	1908										
Total	594	319	913	978	776	1753	476	618	1093	970	1306	2276	6036										
#134																							
Base	0	0	0	0	0	0	0	0	0	0	0	0	0										
Added	319	383	702	0	0	0	285	196	481	579	604	1183	2367										
Total	319	383	702	0	0	0	285	196	481	579	604	1183	2367										
#138																							
Base	-168	-123	-291	-147	-188	-335	-20	-24	-44	0	0	0	-670										
Added	0	0	0	0	0	0	0	0	0	0	0	0	0										
Total	-168	-123	-291	-147	-188	-335	-20	-24	-44	0	0	0	-670										
#158																							
Base	-422	0	-422	0	-259	-259	0	0	0	0	-163	-163	-844										
Added	487	0	487	0	340	340	0	0	0	0	148	148	975										
Total	65	0	65	0	81	81	0	0	0	0	-15	-15	131										
#159																							
Base	-259	0	-259	0	0	0	0	-364	-364	-105	0	-105	-728										
Added	340	0	340	0	0	0	0	430	430	91	0	91	860										
Total	81	0	81	0	0	0	0	66	66	-14	0	-14	132										

Table J.7-8 (Continued)

C-PM.CMD			Tue Nov 5, 1996 12:31:57			Page 4-4			C-PM.CMD			Tue Nov 5, 1996 12:31:58			Page 5-1		
			FISCO/Port Vision 2000 EIS/EIR						FISCO/Port Vision 2000 EIS/EIR								
			Maximum Marine/Minimum Rail Alternative			PM Peak Hour			Maximum Marine/Minimum Rail Alternative			PM Peak Hour					
			NB Link			SB Link			EB Link			WB Link			Intersection		
			In Out Total			In Out Total			In Out Total			In Out Total			Level Of Service		
			In Out Total			In Out Total			In Out Total			In Out Total			Base		
			In Out Total			In Out Total			In Out Total			In Out Total			Del/ V/		
			In Out Total			In Out Total			In Out Total			In Out Total			LOS Veh C		
			In Out Total			In Out Total			In Out Total			In Out Total			B 7.2 0.211		
			In Out Total			In Out Total			In Out Total			In Out Total			C 15.9 0.392		
			In Out Total			In Out Total			In Out Total			In Out Total			C 19.5 0.774		
			In Out Total			In Out Total			In Out Total			In Out Total			B 5.8 0.080		
			In Out Total			In Out Total			In Out Total			In Out Total			B 5.8 0.018		
			In Out Total			In Out Total			In Out Total			In Out Total			B 13.5 0.296		
			In Out Total			In Out Total			In Out Total			In Out Total			C 20.4 0.084		
			In Out Total			In Out Total			In Out Total			In Out Total			0.0 0.000		
			In Out Total			In Out Total			In Out Total			In Out Total			B 12.4 0.237		
			In Out Total			In Out Total			In Out Total			In Out Total			C 17.6 0.328		
			In Out Total			In Out Total			In Out Total			In Out Total			B 12.5 0.178		
			In Out Total			In Out Total			In Out Total			In Out Total			A 2.6 0.113		
			In Out Total			In Out Total			In Out Total			In Out Total			A 1.9 0.000		
			In Out Total			In Out Total			In Out Total			In Out Total			C 21.1 0.505		
			In Out Total			In Out Total			In Out Total			In Out Total					
			In Out Total			In Out Total			In Out Total			In Out Total					
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Table J.7-8 (Continued)

C-PM.CMD		Tue Nov 5, 1996 12:31:58												Page 6-1		
FISCO/Port Vision 2000 EIS/EIR														Page 7-1		
Maximum Marine/Minimum Rail Alternative																
PM Peak Hour																
Level Of Service Computation Report																
1994 HCM Operations Method (Future Volume Alternative)																

Intersection #3 Maritime St./ Burma St.																

Cycle (sec):	100	Critical Vol./Cap. (X):	0.329													
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	9.4													
Optimal Cycle:	58	Level Of Service:	B													

Approach:	North Bound	South Bound	East Bound	West Bound												
Movement:	L - T - R	L - T - R	L - T - R	L - T - R												
Control:	Protected	Protected	Protected	Protected												
Rights:	Include	Include	Include	Include												
Min. Green:	10 20 20	10 20 20	10 20 20	0 0 0												
Lanes:	1 0 1 1 0	1 0 1 1 0	1 0 0 1 0	0 0 0 0 0												

Volume Module:																
Base Vol:	5 590	0 0 109	0 0 50	0 0 0												
Growth Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00												
Initial Bse:	5 590	0 0 109	0 0 50	0 0 0												
Added Vol:	0 394	0 0 238	89 157 0	0 0 0												
PasserByVol:	0 0	0 0 0	0 0 0	0 0 0												
Initial Fut:	5 984	0 0 347	89 157 0	50 0 0												
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00												
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00												
PHF Volume:	5 984	0 0 347	89 157 0	50 0 0												
Reduced Vol:	0 0	0 0 0	0 0 0	0 0 0												
Reduced Vol:	5 984	0 0 347	89 157 0	50 0 0												
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00												
MLF Adj:	1.00 1.05	1.00 1.05	1.05 1.00	1.00 1.00												
Final Vol:	5 1033	0 0 365	94 157 0	50 0 0												

Saturation Flow Module:																
Sat/Lane:	1900 1900	1900 1900	1900 1900	1900 1900												
Adjustment:	0.95 1.00	1.00 0.97	0.97 0.95	1.00 0.85												
Lanes:	1.00 2.00	0.00 1.00	1.59 0.41	1.00 0.00												
Final Sat:	1805 3800	0 1900	2931 755	1805 0												

Capacity Analysis Module:																
Vol/Sat:	0.00 0.27	0.00 0.00	0.12 0.09	0.00 0.03												
Crit Moves:	0.24 0.62	0.00 0.00	0.48 0.20	0.00 0.20												
Green/Cycle:	0.01 0.44	0.00 0.00	0.26 0.43	0.00 0.15												
Volume/Cap:	0.01 0.44	0.00 0.00	0.26 0.43	0.00 0.15												

Level Of Service Module:																
Delay/Veh:	18.7 6.5	0.0 0.0	10.0 23.2	0.0 21.4												
User DelAdj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00												
AdjDel/Veh:	18.7 6.5	0.0 0.0	10.0 23.2	0.0 21.4												
Queue:	0 15	0 0	6 2	4 0												

C-PM.CMD		Tue Nov 5, 1996 12:31:58												Page 7-1		
FISCO/Port Vision 2000 EIS/EIR														Page 7-1		
Maximum Marine/Minimum Rail Alternative																
PM Peak Hour																
Level Of Service Computation Report																
1994 HCM Operations Method (Future Volume Alternative)																

Intersection #4 Maritime St./ 14th St.																

Cycle (sec):	100	Critical Vol./Cap. (X):	0.774													
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	19.5													
Optimal Cycle:	60	Level Of Service:	C													

Approach:	North Bound	South Bound	East Bound	West Bound												
Movement:	L - T - R	L - T - R	L - T - R	L - T - R												
Control:	Protected	Protected	Protected	Protected												
Rights:	Include	Include	Include	Include												
Min. Green:	10 20 20	10 20 20	10 20 20	10 20 20												
Lanes:	1 0 1 1 0	1 0 1 1 0	0 0 1 0 0	1 0 0 1 0												

Volume Module:																
Base Vol:	0 414	28 105	132 0	0 0 0												
Growth Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00												
Initial Bse:	0 414	28 105	132 0	0 0 0												
Added Vol:	301 297	0 0 173	65 97	0 391												
PasserByVol:	0 0	0 0 0	0 0 0	0 0 0												
Initial Fut:	301 711	28 105	305 65	97 0 391												
User Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00												
PHF Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00												
PHF Volume:	301 711	28 105	305 65	97 0 391												
Reduced Vol:	0 0	0 0 0	0 0 0	0 0 0												
Reduced Vol:	301 711	28 105	305 65	97 0 391												
PCE Adj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00												
MLF Adj:	1.00 1.05	1.05 1.00	1.05 1.00	1.00 1.00												
Final Vol:	301 747	29 105	320 69	97 0 391												

Saturation Flow Module:																
Sat/Lane:	1900 1900	1900 1900	1900 1900	1900 1900												
Adjustment:	0.95 0.99	0.99 0.97	0.97 0.58	1.00 0.58												
Lanes:	1.00 1.93	0.07 1.00	1.65 0.35	0.20 0.00												
Final Sat:	1805 3621	141 1805	3032 654	221 0 890												

Capacity Analysis Module:																
Vol/Sat:	0.17 0.21	0.21 0.06	0.11 0.11	0.44 0.00												
Crit Moves:	0.20 0.30	0.30 0.10	0.20 0.20	0.52 0.00												
Green/Cycle:	0.84 0.69	0.69 0.58	0.53 0.53	0.84 0.00												
Volume/Cap:	0.84 0.69	0.69 0.58	0.53 0.53	0.84 0.00												

Level Of Service Module:																
Delay/Veh:	36.2 21.3	21.3 31.2	23.7 23.7	20.7 0.0												
User DelAdj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00												
AdjDel/Veh:	36.2 21.3	21.3 31.2	23.7 23.7	20.7 0.0												
Queue:	10 19	1 3	8 2	3 0 6												

Table J.7-8 (Continued)

C-PM.CMD		Tue Nov 5, 1996 12:31:58		Page 8-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 9-1	
Maximum Marine/Minimum Rail Alternative		Maximum Marine/Minimum Rail Alternative		PM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #5 Maritime St./ 7th St. Extension		Intersection #6 7th St./ 7th St. Extension		Intersection #7 7th St./ 7th St. Extension	
Cycle (sec):	100	Cycle (sec):	100	Cycle (sec):	100
Loss Time (sec):	8 (Y+R = 4 sec)	Loss Time (sec):	8 (Y+R = 4 sec)	Loss Time (sec):	8 (Y+R = 4 sec)
Optimal Cycle:	48	Optimal Cycle:	68	Optimal Cycle:	68
Level Of Service:	B	Level Of Service:	D	Level Of Service:	D
Approach:	North Bound	Approach:	North Bound	Approach:	North Bound
Movement:	L - T - R	Movement:	L - T - R	Movement:	L - T - R
Control:	Protected	Control:	Protected	Control:	Protected
Rights:	Include	Rights:	Include	Rights:	Include
Min. Green:	10 20 0 0 20 20 10 0 20 0 0 0	Min. Green:	10 20 20 10 20 20 10 20 20 0 20 0	Min. Green:	10 20 20 10 20 20 10 20 20 0 20 0
Lanes:	2 0 2 0 0 0 2 0 1 2 0 0 1 0 0 0 0	Lanes:	1 0 1 1 0 1 0 1 1 0 1 0 2 1 0 1 0 2 0 1	Lanes:	1 0 1 1 0 1 0 1 1 0 1 0 2 1 0 1 0 2 0 1
Volume Module:		Volume Module:		Volume Module:	
Base Vol:	36 0 0 0 75 223 0 74 0 0 0	Base Vol:	0 0 0 31 18 0 0 0 0 19 0 0 0	Base Vol:	0 0 0 31 18 0 0 0 0 19 0 0 0
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:	36 0 0 0 75 223 0 74 0 0 0	Initial Bse:	0 0 0 31 18 0 0 0 0 19 0 0 0	Initial Bse:	0 0 0 31 18 0 0 0 0 19 0 0 0
Added Vol:	396 479 0 0 447 116 120 0 429 0 0 0	Added Vol:	191 150 56 448 144 285 405 498 229 39 341 319	Added Vol:	191 150 56 448 144 285 405 498 229 39 341 319
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut:	432 479 0 0 447 191 343 0 503 0 0 0	Initial Fut:	191 150 56 479 162 285 405 498 248 39 341 319	Initial Fut:	191 150 56 479 162 285 405 498 248 39 341 319
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:	432 479 0 0 447 191 343 0 503 0 0 0	PHF Volume:	191 150 56 479 162 285 405 498 248 39 341 319	PHF Volume:	191 150 56 479 162 285 405 498 248 39 341 319
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol:	432 479 0 0 447 191 343 0 503 0 0 0	Reduced Vol:	191 150 56 479 162 285 405 498 248 39 341 319	Reduced Vol:	191 150 56 479 162 285 405 498 248 39 341 319
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:	1.03 1.05 1.00 1.00 1.05 1.00 1.03 1.00 1.00 1.00 1.00 1.00	MLF Adj:	1.00 1.05 1.05 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	MLF Adj:	1.00 1.05 1.05 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol:	445 502 0 0 470 191 353 0 503 0 0 0	Final Vol:	191 157 58 479 162 285 405 547 273 39 358 319	Final Vol:	191 157 58 479 162 285 405 547 273 39 358 319
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:	0.95 1.00 1.00 0.85 0.95 1.00 0.85 0.95 1.00 0.95 1.00 0.85	Adjustment:	0.95 0.96 0.96 0.95 1.00 0.85 0.95 0.95 0.95 0.95 1.00 0.85	Adjustment:	0.95 0.96 0.96 0.95 1.00 0.85 0.95 0.95 0.95 0.95 1.00 0.85
Lanes:	2.00 2.00 0.00 0.00 2.00 1.00 2.00 0.00 1.00 0.00 0.00 0.00	Lanes:	1.00 1.46 0.54 1.00 1.00 1.00 1.00 1.00 2.00 1.00 1.00 2.00	Lanes:	1.00 1.46 0.54 1.00 1.00 1.00 1.00 1.00 2.00 1.00 1.00 2.00
Final Sat:	3610 3800 0 0 3800 1615 3610 0 1615 0 0 0	Final Sat:	1805 2664 994 1805 1900 1615 1805 3612 1803 1805 3800 1615	Final Sat:	1805 2664 994 1805 1900 1615 1805 3612 1803 1805 3800 1615
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:	0.12 0.13 0.00 0.00 0.12 0.12 0.10 0.00 0.31 0.00 0.00 0.00	Vol/Sat:	0.11 0.06 0.06 0.27 0.09 0.18 0.22 0.15 0.15 0.02 0.09 0.20	Vol/Sat:	0.11 0.06 0.06 0.27 0.09 0.18 0.22 0.15 0.15 0.02 0.09 0.20
Crit Moves:	0.26 0.52 0.00 0.00 0.26 0.66 0.40 0.00 0.66 0.00 0.00 0.00	Crit Moves:	0.28 0.20 0.20 0.28 0.20 0.20 0.24 0.20 0.20 0.24 0.20 0.48	Crit Moves:	0.28 0.20 0.20 0.28 0.20 0.20 0.24 0.20 0.20 0.24 0.20 0.48
Green/Cycle:	0.47 0.25 0.00 0.00 0.47 0.18 0.25 0.00 0.47 0.00 0.00 0.00	Green/Cycle:	0.38 0.29 0.29 0.38 0.29 0.29 0.38 0.29 0.29 0.38 0.29 0.41	Green/Cycle:	0.38 0.29 0.29 0.38 0.29 0.29 0.38 0.29 0.29 0.38 0.29 0.41
Volume/Cap:	0.47 0.25 0.00 0.00 0.47 0.18 0.25 0.00 0.47 0.00 0.00 0.00	Volume/Cap:	0.38 0.29 0.29 0.38 0.29 0.29 0.38 0.29 0.29 0.38 0.29 0.41	Volume/Cap:	0.38 0.29 0.29 0.38 0.29 0.29 0.38 0.29 0.29 0.38 0.29 0.41
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh:	20.4 8.5 0.0 0.0 20.4 4.3 13.0 0.0 5.7 0.0 0.0 0.0	Delay/Veh:	18.9 22.0 22.0 41.6 22.8 36.8 45.3 26.5 26.5 19.2 23.2 11.0	Delay/Veh:	18.9 22.0 22.0 41.6 22.8 36.8 45.3 26.5 26.5 19.2 23.2 11.0
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:	20.4 8.5 0.0 0.0 20.4 4.3 13.0 0.0 5.7 0.0 0.0 0.0	AdjDel/Veh:	18.9 22.0 22.0 41.6 22.8 36.8 45.3 26.5 26.5 19.2 23.2 11.0	AdjDel/Veh:	18.9 22.0 22.0 41.6 22.8 36.8 45.3 26.5 26.5 19.2 23.2 11.0
Queue:	11 8 0 0 11 2 7 0 7 0 0 0	Queue:	4 4 1 16 4 10 14 15 8 1 9 6	Queue:	4 4 1 16 4 10 14 15 8 1 9 6

Table J.7-8 (Continued)

C-PM.CMD		Tue Nov 5, 1996 12:31:58		Page 10-1					
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 11-1					
Maximum Marine/Minimum Rail Alternative		Maximum Marine/Minimum Rail Alternative							
PM Peak Hour		PM Peak Hour							
Level Of Service Computation Report									
1994 HCM Operations Method (Future Volume Alternative)									
Intersection #7 Middle Harbor/New Mddl Hrbr Rd									
Cycle (sec):	100	Critical Vol./Cap. (X):	0.830						
Loss Time (sec):	0 (Y+R = 4 sec)	Average Delay (sec/veh):	21.3						
Optimal Cycle:	134	Level Of Service:	C						
Approach: North Bound South Bound East Bound West Bound									
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R				
Control:	Protected	Protected	Protected	Protected	Protected				
Rights:	Include	Include	Include	Include	Include				
Min. Green:	10 0 0 20	0 0 0 20	20 20 10 20	0 0 0 0	0 0 0 0				
Lanes:	1 0 0 1	0 0 0 0	0 0 1 0	1 0 2 0	0 0 0 0				
Volume Module:									
Base Vol:	95	0	229	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	95	0	229	0	0				
Added Vol:	0	0	538	0	0				
PasserByVol:	0	0	0	0	0				
Initial Fut:	95	0	767	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	95	0	767	0	0				
Reduced Vol:	0	0	0	0	0				
Reduced Vol:	95	0	767	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00				
Final Vol:	95	0	767	0	0				
Saturation Flow Module:									
Sat/Lane:	1900	1900	1900	1900	1900				
Adjustment:	0.95	1.00	0.85	1.00	0.97				
Lanes:	1.00	0.00	1.00	0.00	0.00				
Final Sat:	1805	0	1615	0	0				
Capacity Analysis Module:									
Vol/Sat:	0.05	0.00	0.47	0.00	0.00				
Crit Moves:	0.05	0.00	0.47	0.00	0.00				
Green/Cycle:	0.57	0.00	0.57	0.00	0.00				
Volume/Cap:	0.09	0.00	0.84	0.00	0.00				
Level Of Service Module:									
Delay/Veh:	6.4	0.0	16.3	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	6.4	0.0	16.3	0.0	0.0				
Queue:	1	0	19	0	0				

Table J.7-8 (Continued)

C-PM.CMD	Tue Nov 5, 1996 12:31:58	Page 12-1	C-PM.CMD	Tue Nov 5, 1996 12:31:58	Page 13-1
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour			FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)		
Intersection #9 7th/New Middle Harbor			Intersection #12 Maritime St./ W.Grand Ave./ I-880 Ramps		
Cycle (sec):	100	Critical Vol./Cap. (X):	100	Critical Vol./Cap. (X):	0.429
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	10 (Y+R = 4 sec)	Average Delay (sec/veh):	18.9
Optimal Cycle:	58	Level Of Service:	70	Level Of Service:	C
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include
Min. Green:	10 0 0 20	0 0 0 0	0 0 0 0	0 0 0 0	10 20 0
Lanes:	1 0 0 0 1	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	1 0 2 0 0
Volume Module:			Volume Module:		
Base Vol:	0 0 0 0	0 0 0 0	0 23 0	9 23 23	20 454 210
Growth Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	0 0 0 0	0 0 0 0	0 23 0	9 23 23	20 454 210
Added Vol:	0 0 508 0	0 0 0 0	0 110 0	0 0 0 0	0 0 247 81
PasserByVol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Initial Fut:	0 0 508 0	0 0 0 0	0 23 110	9 23 23	20 454 457
User Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Volume:	0 0 508 0	0 0 0 0	0 23 110	9 23 23	20 454 457
Reduc Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Reduced Vol:	0 0 508 0	0 0 0 0	0 23 110	9 23 23	20 454 457
PCE Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Final Vol:	0 0 508 0	0 0 0 0	0 23 110	9 23 23	20 499 503
Saturation Flow Module:			Saturation Flow Module:		
Sat/Lane:	1900 1900	1900 1900	1900 1900	1900 1900	1900 1900
Adjustment:	1.00 1.00	1.00 1.00	0.85 1.00	0.93 0.93	0.93 0.93
Lanes:	1.00 0.00	1.00 0.00	1.00 0.00	1.00 0.50	1.00 1.51
Final Sat:	1900 0 1615	0 0 0 0	3610 289	1383 1805 884	884 1805 2640
Capacity Analysis Module:			Capacity Analysis Module:		
Vol/Sat:	0.00 0.00	0.31 0.00	0.00 0.00	0.03 0.03	0.01 0.19
Crit Moves:	0.00 0.00	0.41 0.00	0.13 0.08	0.08 0.08	0.04 0.18
Green/Cycle:	0.00 0.00	0.00 0.00	0.24 0.29	0.15 0.20	0.15 0.36
Volume/Cap:	0.00 0.00	0.76 0.00	0.52 0.27	0.03 0.13	0.07 0.52
Level Of Service Module:			Level Of Service Module:		
Delay/Veh:	0.0 0.0 20.0	0.0 0.0 0.0	21.8 17.6	17.6 23.6 21.2	21.2 23.4 16.5
User DelAdj:	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00
AdjDel/Veh:	0.0 0.0 20.0	0.0 0.0 0.0	21.8 17.6	17.6 23.6 21.2	21.2 23.4 16.5
Queue:	0 0 13	0 0 0 0	11 1 2	0 1 1	0 11 2

Table J.7-8 (Continued)

C-PM.CMD	Tue Nov 5, 1996 12:31:58	Page 14-1	C-PM.CMD	Tue Nov 5, 1996 12:31:58	Page 15-1				
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour			FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour						
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)						
Intersection #13 Adeline St./ 5th St./ I-880 SB Ramp			Intersection #14 Union St./ 5th St./ I-880 North Ramps						
Cycle (sec):	100	Critical Vol./Cap. (X):	0.656	Cycle (sec):	100	Critical Vol./Cap. (X):	0.199		
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	22.4	Loss Time (sec):	11 (Y+R = 4 sec)	Average Delay (sec/veh):	15.7		
Optimal Cycle:	82	Level Of Service:	C	Optimal Cycle:	71	Level Of Service:	C		
Approach:	North Bound	South Bound	East Bound	West Bound	Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Split Phase	Split Phase	Control:	Protected	Protected	Split Phase	Split Phase
Rights:	Ovl	Include	Include	Include	Rights:	Include	Include	Include	Include
Min. Green:	10 20 20 20 20 20 20 20 20 20	10 20 20 20 20 20 20 20 20 20	10 20 20 20 20 20 20 20 20 20	10 20 20 20 20 20 20 20 20 20	Min. Green:	0 20 20 20 0 20 20 10 20 20	0 20 20 20 10 20 20 10 20 20	10 20 20 20	10 20 20 20
Lanes:	1 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	1 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	1 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	1 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	Lanes:	0 0 1 1 1 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1 0	0 0 1 1 0 0 1 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0	0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	1 0 1 1 0
Volume Module:					Volume Module:				
Base Vol:	0 0 241 0 69 138 157 0 0 202 616				Base Vol:	0 194 281 0 144 30 31 97 18 32 31 34			
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
Initial Bse:	0 0 241 0 69 138 157 0 0 202 616				Initial Bse:	0 194 281 0 144 30 31 97 18 32 31 34			
Added Vol:	154 216 670 0 134 0 0 79 458 0 0				Added Vol:	0 0 79 0 0 0 0 0 0 0 154 0 0			
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0				PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0			
Initial Fut:	154 216 670 241 134 69 138 157 79 458 202 616				Initial Fut:	0 194 360 0 144 30 31 97 18 186 31 34			
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
PHF Volume:	154 216 670 241 134 69 138 157 79 458 202 308				PHF Volume:	0 194 360 0 144 30 31 97 18 186 31 34			
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0				Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0			
Reduced Vol:	154 216 670 241 134 69 138 157 79 458 202 308				Reduced Vol:	0 194 360 0 144 30 31 97 18 186 31 34			
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				MLF Adj:	1.00 1.10 1.10 1.00 1.05 1.05 1.05 1.05 1.05 1.05			
Final Vol:	154 216 670 241 140 72 152 173 87 458 212 323				Final Vol:	0 213 396 0 151 32 33 102 19 186 31 34			
Saturation Flow Module:					Saturation Flow Module:				
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900				Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900			
Adjustment:	0.95 1.00 0.85 0.95 0.95 0.95 0.95 0.95 0.95 0.91				Adjustment:	1.00 0.90 0.90 1.00 0.97 0.97 0.97 0.97 0.97 0.85			
Lanes:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.21				Lanes:	0.00 1.05 1.95 0.00 1.65 0.35 0.43 1.32 0.25 1.00			
Final Sat:	1805 1900 1615 1805 2384 1226 1999 2275 1144 1805 1370 2088				Final Sat:	0 1794 3336 0 3041 645 790 2442 455 1805 1900 1615			
Capacity Analysis Module:					Capacity Analysis Module:				
Vol/Sat:	0.09 0.11 0.41 0.13 0.06 0.06 0.08 0.08 0.08 0.25 0.15 0.15				Vol/Sat:	0.00 0.12 0.12 0.00 0.05 0.05 0.04 0.04 0.04 0.02			
Crit Moves:	0.09 0.11 0.41 0.13 0.06 0.06 0.08 0.08 0.08 0.25 0.15 0.15				Crit Moves:	0.00 0.12 0.12 0.00 0.05 0.05 0.04 0.04 0.04 0.02			
Green/Cycle:	0.12 0.20 0.51 0.17 0.24 0.24 0.20 0.20 0.20 0.31 0.31 0.31				Green/Cycle:	0.00 0.37 0.37 0.00 0.37 0.37 0.20 0.20 0.20 0.32			
Volume/Cap:	0.70 0.57 0.81 0.81 0.24 0.24 0.38 0.38 0.38 0.81 0.49 0.49				Volume/Cap:	0.00 0.32 0.32 0.00 0.13 0.13 0.21 0.21 0.21 0.07			
Level Of Service Module:					Level Of Service Module:				
Delay/Veh:	33.6 23.7 16.2 36.2 19.7 19.7 22.5 22.5 22.5 26.2 18.3 18.3				Delay/Veh:	0.0 14.6 14.6 0.0 13.5 13.5 21.6 21.6 21.6 16.7 15.2 15.2			
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00			
AdjDel/Veh:	33.6 23.7 16.2 36.2 19.7 19.7 22.5 22.5 22.5 26.2 18.3 18.3				AdjDel/Veh:	0.0 14.6 14.6 0.0 13.5 13.5 21.6 21.6 21.6 16.7 15.2 15.2			
Queue:	5 6 17 8 3 2 4 4 2 13 5 7				Queue:	0 4 8 0 3 1 1 2 0 4 1 1			

Table J.7-8 (Continued)

C-PM.CMD	Tue Nov 5, 1996 12:31:58	Page 16-1	C-PM.CMD	Tue Nov 5, 1996 12:31:58	Page 17-1
FISCO/Port Vision 2000 EIS/EIR Maximum Marine/Minimum Rail Alternative PM Peak Hour					
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)					
Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.					
Cycle (sec):	100	Critical Vol./Cap. (X):	0.413		
Loss Time (sec):	10 (Y+R = 4 sec)	Average Delay (sec/veh):	17.6		
Optimal Cycle:	70	Level Of Service:	C		
Approach: North Bound South Bound East Bound West Bound					
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include
Min. Green:	10 20 20	10 20 20	10 20 20	10 20 20	10 20 20
Lanes:	2 0 0 1 0	1 0 0 0 2	1 0 2 0 0	0 0 1 1 0	
Volume Module:					
Base Vol:	0 197 3 2 0 205	0 108 0 108	0 0 53 1		
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00		
Initial Bse:	0 197 3 2 0 205	0 108 0 108	0 0 53 1		
Added Vol:	381 0 0 0 0 316	447 11 0 0 3	0 0 3 0		
PasserByVol:	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0		
Initial Fut:	381 197 3 2 0 521	447 119 0 0 56 1			
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00		
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00		
PHF Volume:	381 197 3 2 0 521	447 119 0 0 56 1			
Reduced Vol:	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0		
Reduced Vol:	381 197 3 2 0 521	447 119 0 0 56 1			
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00		
MLF Adj:	1.03 1.00 1.00 1.00 1.00 1.13	1.00 1.05 1.00 1.00 1.05 1.05	1.00 1.05 1.05 1.05		
Final Vol:	392 197 3 2 0 589	447 124 0 0 59 1			
Saturation Flow Module:					
Sat/Lane:	1900 1900 1900 1900 1900 1900	1900 1900 1900 1900 1900 1900	1900 1900 1900		
Adjustment:	0.95 1.00 1.00 0.95 1.00 0.85	0.95 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00		
Lanes:	2.00 0.98 0.02 1.00 0.00 2.00	1.00 2.00 0.00 0.00 1.97 0.03			
Final Sat:	3610 1872 29 1805	0 3230 1805 3800	0 0 3737 63		
Capacity Analysis Module:					
Vol/Sat:	0.11 0.11 0.11	0.00 0.00 0.18	0.25 0.03 0.00	0.00 0.02 0.02	
Crit Moves:	****	****	****	****	
Green/Cycle:	0.15 0.23 0.23	0.12 0.00 0.55	0.35 0.55 0.00	0.00 0.20 0.20	
Volume/Cap:	0.71 0.45 0.45	0.01 0.00 0.33	0.71 0.06 0.00	0.00 0.08 0.08	
Level Of Service Module:					
Delay/Veh:	29.0 21.6 21.6	25.2 0.0 8.1	20.9 6.8 0.0	0.0 21.0 21.0	
User DelAdj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
AdjDel/Veh:	29.0 21.6 21.6	25.2 0.0 8.1	20.9 6.8 0.0	0.0 21.0 21.0	
Queue:	11 5 0	0 0 9	11 2 0	0 0 1	

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Table J.7-8 (Continued)

C-PM.CMD	Tue Nov 5, 1996 12:31:58		Page 18-1	
FISCO/Port Vision 2000 EIS/EIR				
Maximum Marine/Minimum Rail Alternative				
PM Peak Hour				
Level of Service Computation Report				
1994 HCM Unsignalized Method (Future Volume Alternative)				
Intersection #17 14th St./ I-880 Frontage Rd.				
Average Delay (sec/veh): 2.5 Worst Case Level Of Service: D				
Approach: North Bound South Bound East Bound West Bound				
Movement: L - T - R L - T - R L - T - R L - T - R				
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign				
Rights: Include Include Include Include				
Lanes: 0 0 1 1 0 1 0 2 0 0 0 0 0 0 0 1 0 0 0 1				
Volume Module:				
Base Vol: 0 62 130 4 0 0 0 0 0 0 0 115 0 7				
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
Initial Bse: 0 62 130 4 0 0 0 0 0 0 0 115 0 7				
Added Vol: 0 447 0 0 316 0 0 0 0 0 0 0 0 0				
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Initial Fut: 0 509 130 4 316 0 0 0 0 0 0 115 0 7				
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
PHF Volume: 0 509 130 4 316 0 0 0 0 0 0 115 0 7				
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Final Vol: 0 509 130 4 316 0 0 0 0 0 0 115 0 7				
Adjusted Volume Module:				
Grade: 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%				
% Cycle/Cars: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx				
% Truck/Comb: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx				
PCE Adj: 1.10 1.00 1.00 1.10 1.00 1.00 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10				
Cycl/Car PCE: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx				
Trck/Cmb PCE: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx				
Adj Vol: 0 509 130 4 316 0 0 0 0 0 0 127 0 8				
Critical Gap Module:				
MoveUp Time:xxxxx xxxx xxxx 2.1 xxxx xxxx 3.4 xxxx 2.6				
Critical Gap:xxxxx xxxx xxxx 5.5 xxxx xxxx 7.0 xxxx 5.5				
Capacity Module:				
Conflict Vol: xxxx xxxx 639 xxxx 639 xxxx 894 xxxx 320				
Potent Cap: xxxx xxxx 778 xxxx 778 xxxx 284 xxxx 954				
Adj Cap: xxxx xxxx 1.00 xxxx 1.00 xxxx 0.99 xxxx 1.00				
Move Cap: xxxx xxxx 778 xxxx 778 xxxx 282 xxxx 954				
Level of Service Module:				
Stopped Del:xxxxx xxxx 4.7 xxxx 4.7 xxxx 21.5 xxxx 3.8				
LOS by Move: A * * * * * A * * * * * D * * * * *				
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT				
Shared Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx				
Shrd StpDel:xxxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx				
Shared LOS: *				
ApproachDel: 0.0 0.1 0.0 20.5				

C-PM.CMD	Tue Nov 5, 1996 12:31:58		Page 19-1	
FISCO/Port Vision 2000 EIS/EIR				
Maximum Marine/Minimum Rail Alternative				
PM Peak Hour				
Level of Service Computation Report				
1994 HCM Operations Method (Future Volume Alternative)				
Intersection #18 W.Grand Ave./ I-880 Frontage Rd.				
Cycle (sec): 100 Critical Vol./Cap. (X): 0.671				
Loss Time (sec): 11 (Y+R = 4 sec) Average Delay (sec/veh): 22.3				
Optimal Cycle: 81 Level Of Service: C				
Approach: North Bound South Bound East Bound West Bound				
Movement: L - T - R L - T - R L - T - R L - T - R				
Control: Split Phase Split Phase Split Phase Protected Protected				
Rights: Include Include Include Include				
Min. Green: 10 20 20 10 20 20 10 20 20 10 20 20				
Lanes: 1 0 1 1 0 1 1 0 1 0 1 0 1 0 1 1 1				
Volume Module:				
Base Vol: 75 72 0 759 0 6 86 277 3 0 456 330				
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
Initial Bse: 75 72 0 759 0 6 86 277 3 0 456 330				
Added Vol: 0 288 160 0 213 0 0 110 0 103 81 0				
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0				
Initial Fut: 75 360 160 759 213 6 86 387 3 103 537 330				
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
PHF Volume: 75 360 160 759 213 6 86 387 3 103 537 330				
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0				
Reduced Vol: 75 360 160 759 213 6 86 387 3 103 537 330				
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
MLF Adj: 1.00 1.05 1.05 1.05 1.00 1.00 1.00 1.05 1.05 1.00 1.10 1.10				
Final Vol.: 75 378 168 797 213 6 86 406 3 103 590 363				
Saturation Flow Module:				
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900				
Adjustment: 0.95 0.95 0.95 0.95 1.00 1.00 0.95 1.00 1.00 0.95 0.94 0.94				
Lanes: 1.00 1.38 0.62 2.00 0.97 0.03 1.00 1.99 0.01 1.00 1.86 1.14				
Final Sat.: 1805 2499 1111 3610 1848 52 1805 3772 28 1805 3317 2041				
Capacity Analysis Module:				
Vol/Sat: 0.04 0.15 0.15 0.22 0.12 0.12 0.05 0.11 0.11 0.06 0.18 0.18				
Crit Moves: ****				
Green/Cycle: 0.22 0.22 0.22 0.32 0.32 0.32 0.10 0.24 0.24 0.12 0.26 0.26				
Volume/Cap: 0.19 0.70 0.70 0.70 0.36 0.36 0.48 0.45 0.45 0.48 0.70 0.70				
Level Of Service Module:				
Delay/Veh: 20.7 25.2 25.2 20.4 17.1 17.1 29.0 21.3 21.3 28.0 22.9 22.9				
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00				
AdjDel/Veh: 20.7 25.2 25.2 20.4 17.1 17.1 29.0 21.3 21.3 28.0 22.9 22.9				
Queue: 2 10 5 20 5 0 2 10 0 3 15 10				

Table J.7-9

D-AM.CMD		Tue Nov 5, 1996 13:07:18				Page 1-1			
		FISCO/Port Vision 2000 EIS/EIR							
		Reduced Harbor Fill Alternative							
		AM Peak Hour							
Trip Generation Report									
Forecast for AM Peak Hour									
Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total % Of Trips	Total % Of Trips
1	New Harbor	1088.00	Employees	0.26	0.05	283	54	337	5.3
	Zone 1 Subtotal					283	54	337	5.3
3	J.I.T.	343.00	Employees	0.40	0.09	137	31	168	2.7
	Zone 3 Subtotal					137	31	168	2.7
6	Middle Harbr	516.00	Employees	0.26	0.05	134	26	160	2.5
	Zone 6 Subtotal					134	26	160	2.5
7	7th St Harbr	613.00	Employees	0.26	0.05	159	31	190	3.0
	Zone 7 Subtotal					159	31	190	3.0
8	Outer Harbor	706.00	Employees	0.26	0.05	184	35	219	3.5
	Zone 8 Subtotal					184	35	219	3.5
10	New Park	1.00	Total Trips	29.00	19.00	29	19	48	0.8
	Zone 10 Subtotal					29	19	48	0.8
11	New Harbor	1.00	Trucks Inter	279.00	297.00	279	297	576	9.1
	Zone 11 Subtotal					279	297	576	9.1
16	Middle Harbr	1.00	Trucks Inter	132.00	141.00	132	141	273	4.3
	Zone 16 Subtotal					132	141	273	4.3
17	7th St Harbr	1.00	Trucks Inter	158.00	168.00	158	168	326	5.2
	Zone 17 Subtotal					158	168	326	5.2
18	Outer Harbor	1.00	Trucks Inter	181.00	193.00	181	193	374	5.9
	Zone 18 Subtotal					181	193	374	5.9
21	New Harbor	1.00	Truck External	497.00	529.00	497	529	1026	16.2
	Zone 21 Subtotal					497	529	1026	16.2
23	J.I.T.	1.00	Truck External	431.00	459.00	431	459	890	14.1
	Zone 23 Subtotal					431	459	890	14.1
26	Middle Harbr	1.00	Truck External	236.00	251.00	236	251	487	7.7
	Zone 26 Subtotal					236	251	487	7.7
27	7th St Harbr	1.00	Truck External	280.00	298.00	280	298	578	9.1
	Zone 27 Subtotal					280	298	578	9.1
28	Outer Harbor	1.00	Truck External	323.00	343.00	323	343	666	10.5
	Zone 28 Subtotal					323	343	666	10.5
	TOTAL					3443	2875	6318	100.0

D-AM.CMD		Tue Nov 5, 1996 13:07:18				Page 1-2			
		FISCO/Port Vision 2000 EIS/EIR							
		Reduced Harbor Fill Alternative							
		AM Peak Hour							
Trip Generation Report									
Forecast for AM Peak Hour									
Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total % Of Trips	Total % Of Trips
Zone 28 Subtotal						323	343	666	10.5
	TOTAL					3443	2875	6318	100.0

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Table J.7-9 (Continued)

D-AM.CMD		Tue Nov 5, 1996 13:07:19										D-AM.CMD		Tue Nov 5, 1996 13:07:19										Page 3-1	
		FISCO/Port Vision 2000 EIS/EIR												FISCO/Port Vision 2000 EIS/EIR											
		Reduced Harbor Fill Alternative												Reduced Harbor Fill Alternative											
		AM Peak Hour												AM Peak Hour											
		Trip Distribution Report												Turning Movement Report											
		Percent Of Trips Existing												AM Peak Hour											
		To Gates												Southbound											
		3 4 5 11 12 13 14 15 16												Left Thru Right Left Thru Right Left Thru Right Left Thru Right											
Zone												Volume Type	Northbound	Southbound	Eastbound	Westbound	Total								
													Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right Volume								
#3 Maritime St./ Burma St.																									
	1	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0	Base	5	78	0	0	287	0	0	5	0	0	0	375	
	3	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0	Added	0	253	0	0	387	178	107	0	0	0	0	925	
	6	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0	Total	5	331	0	0	674	178	107	0	5	0	0	1300	
	7	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0														
	8	0.0	0.0	0.0	0.0	5.0	17.0	23.0	11.0	30.0	14.0	#4 Maritime St./ 14th St.													
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Base	0	91	39	103	261	0	0	0	22	0	87	603	
	11	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	Added	404	171	0	0	281	106	82	0	382	0	0	1426	
	16	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Total	404	262	39	103	542	106	82	0	382	22	0	87	2029
	17	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	#5 Maritime St./ 7th St. Extension													
	18	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Base	159	0	0	0	334	69	0	37	0	0	0	599	
	21	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0	Added	947	335	0	0	384	279	240	0	868	0	0	3053	
	23	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0	Total	1106	335	0	0	384	613	309	0	905	0	0	3652	
	26	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0	#6 7th St./ 7th St. Extension													
	27	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0	Base	0	0	0	0	0	0	0	0	0	0	0	54	
	28	0.0	0.0	0.0	0.0	2.0	20.0	9.0	20.0	32.0	17.0	Added	0	0	0	620	0	632	577	303	0	0	375	705	
												Total	0	0	0	620	0	632	577	303	0	0	375	759	
												#7													
												Base	53	0	45	0	0	0	0	39	208	338	0	683	
												Added	0	0	0	0	0	0	516	0	0	678	0	1194	
												Total	53	0	45	0	0	0	516	39	208	1016	0	1877	
												#8 Adeline St./ 3rd St.													
												Base	8	0	31	26	0	26	8	6	29	50	59	299	
												Added	0	793	0	0	1048	0	0	0	0	0	0	1841	
												Total	8	793	31	26	1048	26	8	6	29	50	59	2140	
												#9 7th/Middle Harbor Rd													
												Base	0	0	0	0	0	0	0	0	0	0	0	1	
												Added	17	0	368	0	0	0	0	513	3	399	609	0	1908
												Total	17	0	368	0	0	0	513	3	399	609	1	1909	
												#10 New Harbor/Mid Harbor Rd													
												Base	0	0	0	0	0	0	0	0	0	0	0	0	
												Added	368	0	512	0	0	0	3	399	660	17	0	1960	
												Total	368	0	512	0	0	0	3	399	660	17	0	1960	
												#12 Maritime St./ W.Grand Ave./ I-880 Ramps													
												Base	0	33	0	16	28	47	48	394	438	0	300	9	1313
												Added	297	0	63	0	0	0	0	0	484	81	0	0	925
												Total	297	33	63	16	28	47	48	394	922	81	300	9	2238

Table J.7-9 (Continued)

D-AM.CMD		Tue Nov 5, 1996 13:07:19										Page 3-2	
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour													
Volume		Northbound		Southbound		Eastbound		Westbound		Total			
Type		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
#13 Adeline St./ 5th St./ I-880 SB Ramp													
Base	0	0	0	72	109	165	256	51	0	0	169	364	1186
Added	198	153	442	0	209	0	0	270	570	0	0	1841	0
Total	198	153	442	72	318	165	256	51	270	570	169	364	3027
#14 Union St./ 5th St./ I-880 North Ramps													
Base	0	175	45	0	154	31	24	43	13	205	31	115	836
Added	0	0	270	0	0	0	0	0	198	0	0	468	0
Total	0	175	315	0	154	31	24	43	13	403	31	115	1304
#15 7th St./ I-880 NB Ramps / Frontage Rd.													
Base	0	548	21	17	0	94	0	16	0	62	1	759	0
Added	697	0	0	0	0	365	314	4	0	19	0	1399	0
Total	697	548	21	17	0	459	314	20	0	81	1	2158	0
#16 7th St./ I-880 SB Ramps													
Base	0	0	0	0	0	0	0	0	65	0	0	65	0
Added	0	0	0	0	0	0	318	605	0	1081	0	2003	0
Total	0	0	0	0	0	0	318	605	65	1081	0	2068	0
#17 14th St./ I-880 Frontage Rd.													
Base	0	0	89	30	0	0	0	0	140	0	6	265	0
Added	0	314	0	0	365	0	0	0	0	0	0	679	0
Total	0	314	89	30	365	0	0	0	140	0	6	944	0
#18 W. Grand Ave./ I-880 Frontage Rd.													
Base	9	0	0	678	48	6	65	234	12	0	152	449	1653
Added	0	162	152	0	193	0	0	63	0	172	81	0	823
Total	9	162	152	678	241	6	65	297	12	172	233	449	2476
#134													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	750	0	0	0	0	490	0	799	568	0	2607
Total	0	0	750	0	0	0	0	490	0	799	568	0	2607
#138													
Base	0	-156	0	0	-173	-26	-24	0	0	0	0	0	-379
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	-156	0	0	-173	-26	-24	0	0	0	0	0	-379
#158													
Base	0	-180	-129	0	0	0	0	0	0	0	0	0	-309
Added	0	210	116	0	0	0	0	0	0	0	0	0	326
Total	0	30	-13	0	0	0	0	0	0	0	0	0	17

D-AM.CMD		Tue Nov 5, 1996 13:07:19										Page 3-3	
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour													
Volume		Northbound		Southbound		Eastbound		Westbound		Total			
Type		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
#159													
Base	-180	0	0	0	0	0	0	0	0	0	0	-178	0
Added	210	0	0	0	0	0	0	0	0	0	0	171	0
Total	30	0	0	0	0	0	0	0	0	0	0	-7	0
#160													
Base	0	0	0	0	0	0	0	0	0	0	-178	-180	0
Added	0	0	0	0	0	0	0	0	0	0	171	210	0
Total	0	0	0	0	0	0	0	0	0	0	-7	30	0
#161													
Base	0	0	0	-178	0	0	0	-286	0	0	0	0	-464
Added	0	0	0	171	0	0	0	365	0	0	0	0	536
Total	0	0	0	-7	0	0	0	79	0	0	0	0	72
#165													
Base	0	0	0	-227	0	0	0	-495	0	0	0	0	-722
Added	0	0	0	270	0	0	0	605	0	0	0	0	874
Total	0	0	0	43	0	0	0	110	0	0	0	0	152
#170													
Base	-153	-564	0	0	0	0	0	0	0	0	0	0	-717
Added	198	697	0	0	0	0	0	895	0	0	0	0	895
Total	45	133	0	0	0	0	0	0	0	0	0	0	178
#177													
Base	0	0	0	-351	0	0	-129	0	0	0	0	0	-480
Added	0	0	0	410	0	0	116	0	0	0	0	0	526
Total	0	0	0	59	0	0	-13	0	0	0	0	0	46
#178													
Base	-266	0	0	0	0	-104	-25	0	0	0	0	0	-395
Added	332	0	0	0	0	75	41	0	0	0	0	0	447
Total	66	0	0	0	0	-29	16	0	0	0	0	0	52
#182													
Base	-370	0	0	-475	0	0	0	0	0	0	0	0	-845
Added	406	0	0	506	0	0	0	0	0	0	0	0	912
Total	36	0	0	31	0	0	0	0	0	0	0	0	67
#201													
Base	0	0	0	0	0	0	-932	0	0	0	0	0	-932
Added	0	0	0	0	0	0	1046	0	0	0	0	0	1046
Total	0	0	0	0	0	0	114	0	0	0	0	0	114

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Table J.7-9 (Continued)

D-AM.CMD		Tue Nov 5, 1996 13:07:19				Page 3-4				D-AM.CMD				Page 3-5			
		FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR				Reduced Harbor Fill Alternative				Reduced Harbor Fill Alternative			
		AM Peak Hour				AM Peak Hour				AM Peak Hour				AM Peak Hour			
Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total
Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume	Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume	Type	Left Thru Right	Left Thru Right	Left Thru Right	Left Thru Right	Volume
#204						#244											
Base	0	0	0	0	0	Base	0	0	0	0	0	Base	0	0	0	0	0
Added	0	0	0	0	0	Added	0	0	0	0	0	Added	0	0	0	0	0
Total	0	0	0	0	0	Total	0	0	0	0	0	Total	0	0	0	0	0
#207																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#214																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#217																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#218																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#219																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#220																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#225																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												
#226																	
Base	0	0	0	0	0												
Added	0	0	0	0	0												
Total	0	0	0	0	0												

Table J.7-9 (Continued)

D-AM, CMD			Tue Nov 5, 1996 13:07:19										Page 4-1			Page 4-2							
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour																							
Link Volume Report AM Peak Hour																							
Volume		NB Link		SB Link		EB Link		WB Link		Total		Volume		NB Link		SB Link		EB Link		WB Link		Total	
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	Type	In	Out	Total	In	Out	Total	In	Out	Total	Type
#13 Adeline St./ 5th St./ I-880 SB Ramp																							
Base	0	109	109	346	620	966	307	334	641	533	123	656	2372										
Added	793	1048	1841	209	153	361	270	198	468	570	442	1011	3681										
Total	793	1157	1950	555	773	1327	577	532	1109	1103	565	1667	6053										
#14 Union St./ 5th St./ I-880 North Ramps																							
Base	220	372	592	185	314	499	80	62	142	351	88	439	1672										
Added	270	198	468	0	0	0	0	0	0	198	270	468	935										
Total	490	570	1060	185	314	499	80	62	142	549	358	907	2607										
#15 7th St./ I-880 NB Ramps / Frontage Rd.																							
Base	569	0	569	111	549	660	16	156	172	63	54	117	1518										
Added	697	0	697	365	314	679	318	1081	1399	19	4	24	2798										
Total	1266	0	1266	476	863	1339	334	1237	1571	82	58	141	4316										
#16 7th St./ I-880 SB Ramps																							
Base	0	65	65	0	0	0	0	0	0	65	0	65	130										
Added	0	605	605	0	0	0	923	1081	2003	1081	318	1399	4007										
Total	0	670	670	0	0	0	923	1081	2003	1146	318	1464	4137										
#17 14th St./ I-880 Frontage Rd.																							
Base	89	140	229	30	6	36	0	0	0	146	119	265	530										
Added	314	365	679	365	314	679	0	0	0	0	0	0	1357										
Total	403	505	908	395	320	715	0	0	0	146	119	265	1887										
#18 W. Grand Ave./ I-880 Frontage Rd.																							
Base	9	60	69	732	514	1246	311	167	478	601	912	1513	3306										
Added	314	365	679	193	162	354	63	81	144	253	215	468	1645										
Total	323	425	748	925	676	1600	374	248	622	854	1127	1981	4951										
#134																							
Base	0	0	0	0	0	0	0	0	0	0	0	0	0										
Added	750	799	1549	0	0	0	490	568	1058	1367	1240	2607	5214										
Total	750	799	1549	0	0	0	490	568	1058	1367	1240	2607	5214										
#138																							
Base	-156	-173	-329	-199	-180	-379	-24	-26	-50	0	0	0	-758										
Added	0	0	0	0	0	0	0	0	0	0	0	0	0										
Total	-156	-173	-329	-199	-180	-379	-24	-26	-50	0	0	0	-758										
#158																							
Base	-309	0	-309	0	-180	-180	0	0	0	0	0	-129	-618										
Added	326	0	326	0	210	210	0	0	0	0	0	116	651										
Total	17	0	17	0	30	30	0	0	0	0	0	-13	-33										

Table J.7-9 (Continued)

D-AM.CMD				Tue Nov 5, 1996 13:07:19				D-AM.CMD				Tue Nov 5, 1996 13:07:19				Page 4-3				Page 4-4					
				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR													
				Reduced Harbor Fill Alternative				Reduced Harbor Fill Alternative				Reduced Harbor Fill Alternative													
				AM Peak Hour				AM Peak Hour				AM Peak Hour													
Volume	NB Link		Type	SB Link		EB Link	Total	NB Link		SB Link		EB Link	Total	NB Link		SB Link		EB Link	Total						
In	Out	Total		In	Out			Total	In	Out	Total			In	Out	Total	In			Out	Total				
#159																									
-180	0	-180	Base	0	0	0	-358	-178	0	-358	-178	0	-178	-716	0	-580	-580	-932	0	-932	0	0	0	-352	-1864
210	0	210	Added	0	0	0	381	381	171	0	171	0	171	761	0	655	655	1046	0	1046	0	0	0	392	2093
30	0	30	Total	0	0	0	23	23	-7	0	-7	0	-7	45	0	75	75	114	0	114	0	0	0	40	229
#160																									
0	-178	-178	Base	0	0	0	-180	-180	-358	0	-358	-178	0	-178	-716	-714	0	-714	0	-1110	-1110	0	0	-396	-222
0	171	171	Added	0	0	0	210	210	381	0	381	0	381	761	835	0	835	0	1266	1266	0	0	432	0	432
0	-7	-7	Total	0	0	0	30	30	23	0	23	0	23	45	121	0	121	0	156	156	0	0	36	0	36
#161																									
0	-464	-464	Base	-178	0	-178	-286	0	-286	0	-286	0	0	-928	0	-546	-546	0	0	0	-564	-564	-1110	0	-1110
0	536	536	Added	171	0	171	365	0	365	0	365	0	0	1072	0	570	570	0	0	0	697	697	1266	0	1266
0	72	72	Total	-7	0	-7	79	0	79	0	79	0	0	144	0	24	24	0	0	0	133	133	156	0	156
#165																									
0	-722	-722	Base	-227	0	-227	-495	0	-495	0	-495	0	0	-1444	0	-45	-45	-45	0	-45	-25	0	-25	0	-25
0	874	874	Added	270	0	270	605	0	605	0	605	0	0	1748	0	26	26	26	0	26	41	0	41	0	41
0	152	152	Total	43	0	43	110	0	110	0	110	0	0	304	0	-19	-19	-19	0	-19	16	0	16	0	16
#170																									
-717	0	-717	Base	-153	0	-153	-129	0	-129	0	-129	0	-129	-960	-21	0	-21	0	-42	-42	-25	0	-25	0	-25
895	0	895	Added	198	0	198	116	0	116	0	116	0	116	1052	9	0	9	0	46	46	41	0	41	0	41
178	0	178	Total	45	0	45	-13	0	-13	0	-13	0	-13	356	-12	0	-12	0	4	4	16	0	16	0	16
#177																									
0	-351	-351	Base	-351	0	-351	-129	0	-129	0	-129	0	-129	-960	-43	0	-43	0	-43	-43	0	-20	-20	0	-20
0	410	410	Added	410	0	410	116	0	116	0	116	0	116	1052	46	0	46	0	46	46	0	20	20	0	20
0	59	59	Total	59	0	59	-13	0	-13	0	-13	0	-13	92	3	0	3	0	3	3	0	0	0	0	0
#178																									
-266	0	-266	Base	-370	0	-370	-129	0	-129	0	-129	0	-129	-790	0	-45	-45	-79	0	-79	0	-54	-54	0	-20
332	0	332	Added	406	0	406	116	0	116	0	116	0	116	895	0	26	26	80	0	80	0	75	75	20	0
66	0	66	Total	36	0	36	-13	0	-13	0	-13	0	16	105	0	-19	-19	1	0	1	0	21	21	0	0
#182																									
-370	0	-370	Base	-475	0	-475	-845	0	-475	0	-475	0	-475	-1690	0	0	0	0	-20	-20	0	-396	-396	-416	0
406	0	406	Added	506	0	506	506	0	506	0	506	0	0	1824	0	0	0	0	20	20	0	432	432	452	0
36	0	36	Total	31	0	31	31	0	31	0	31	0	0	134	0	0	0	0	0	0	36	36	36	0	36
#201																									
0	0	0	Base	0	0	0	-932	0	-932	0	-932	0	-932	-1864	0	0	0	-4	-4	-352	0	-352	0	-356	
0	0	0	Added	0	0	0	1046	0	1046	0	1046	0	1046	2093	0	0	0	4	4	392	0	392	0	395	
0	0	0	Total	0	0	0	114	0	114	0	114	0	114	229	0	0	0	-0	-0	40	0	40	0	39	

Table J.7-9 (Continued)

D-AM.CMD		Tue Nov 5, 1996 13:07:19				Page 4-5		D-AM.CMD				Tue Nov 5, 1996 13:07:19				Page 5-1				
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour														FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour						
Impact Analysis Report Level Of Service														Impact Analysis Report Level Of Service						
Volume		NB Link		SB Link		EB Link		WB Link		Total		Intersection		Base Del/V/ LOS Veh C		Future Del/V/ LOS Veh C		Change in		
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total								
#244																				
Base	0	0	-288	-312	-600	-359	-333	-692	-45	-47	-92	-1384	# 3 Maritime St./ Burma St.	B	6.3	0.089	B	8.5	0.267	+ 2.127 D/V
Added	0	0	0	0	0	0	0	0	0	0	0	0	# 4 Maritime St./ 14th St.	C	15.0	0.161	C	20.5	0.807	+ 5.511 D/V
Total	0	0	-288	-312	-600	-359	-333	-692	-45	-47	-92	-1384	# 5 Maritime St./ 7th St. Extension	B	12.7	0.071	C	19.0	0.926	+ 6.292 D/V
													# 6 7th St./ 7th St. Extension	B	11.8	0.000	C	15.7	0.819	+ 3.884 D/V
													# 8 Adeline St./ 3rd St.	B	8.7	0.064	F	82.2	0.673	+73.447 D/V
													# 9 7th/Middle Harbor Rd	C	15.8	0.000	C	16.7	0.643	+ 0.833 D/V
													# 10 New Harbor/Mid Harbor Rd		0.0	0.000	D	25.1	0.888	+25.103 D/V
													# 12 Maritime St./ W.Grand Ave./ I-	B	12.0	0.242	C	16.6	0.525	+ 4.626 D/V
													# 13 Adeline St./ 5th St./ I-880 SB	C	18.3	0.236	C	24.3	0.838	+ 6.070 D/V
													# 14 Union St./ 5th St./ I-880 Nort	C	16.4	0.104	C	17.6	0.395	+ 1.212 D/V
													# 15 7th St./ I-880 NB Ramps / Fron	B	13.0	0.366	C	21.3	0.565	+ 8.317 D/V
													# 16 7th St./ I-880 SB Ramps	A	0.1	0.020	A	1.4	0.414	+ 1.319 D/V
													# 17 14th St./ I-880 Frontage Rd.	A	2.8	0.000	C	3.0	0.000	+ 0.000 V/C
													# 18 W.Grand Ave./ I-880 Frontage R	C	19.9	0.237	C	21.7	0.456	+ 1.890 D/V

Table J.7-9 (Continued)

D-AM.CMD	Tue Nov 5, 1996 13:07:19	Page 6-1
FISCO/Port Vision 2000 EIS/EIR		Page 7-1
Reduced Harbor Fill Alternative		
AM Peak Hour		
Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		
Intersection #3 Maritime St./ Burma St.		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.267
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh): 8.5
Optimal Cycle:	58	Level Of Service: B
Intersection #4 Maritime St./ 14th St.		
Cycle (sec):	100	Critical Vol./Cap. (X): 0.807
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh): 20.5
Optimal Cycle:	67	Level Of Service: C
Level Of Service Computation Report		
1994 HCM Operations Method (Future Volume Alternative)		
Approach: North Bound South Bound East Bound West Bound		
Movement: L - T - R L - T - R L - T - R L - T - R		
Control: Protected Protected Protected Protected		
Rights: Include Include Include Include		
Min. Green: 10 20 20 10 20 20 10 20 20 10 20 20		
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 0 0 0 0 0		
Volume Module:		
Base Vol:	5 78	0 0 287 0 0 0 5 0 0 0
Growth Adj:	1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:	5 78	0 0 287 0 0 0 5 0 0 0
Added Vol:	0 253	0 0 387 178 107 0 0 0 0 0 0
PasserByVol:	0 0 0	0 0 0 0 0 0 0 0 0 0 0
Initial Fut:	5 331	0 0 674 178 107 0 5 0 0 0 0
User Adj:	1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:	5 331	0 0 674 178 107 0 5 0 0 0 0
Reduced Vol:	0 0 0	0 0 0 0 0 0 0 0 0 0 0
Reduced Vol:	5 331	0 0 674 178 107 0 5 0 0 0 0
PCE Adj:	1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MUF Adj:	1.00 1.05	1.00 1.05 1.05 1.00 1.00 1.00 1.00 1.00
Final Vol:	5 348	0 0 708 187 107 0 5 0 0 0 0
Saturation Flow Module:		
Sat/Lane:	1900 1900	1900 1900 1900 1900 1900 1900
Adjustment:	0.95 1.00	1.00 0.97 0.97 0.95 1.00 0.85 1.00 1.00 1.00
Lanes:	1.00 2.00	0.00 1.00 1.58 0.42 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat:	1805 3800	0 1900 2916 770 1805 0 1615 0 0 0
Capacity Analysis Module:		
Vol/Sat:	0.00 0.09	0.00 0.00 0.24 0.24 0.06 0.00 0.00 0.00 0.00 0.00
Crit Moves:	****	****
Green/Cycle:	0.10 0.48	0.00 0.00 0.62 0.62 0.20 0.00 0.20 0.00 0.00 0.00
Volume/Cap:	0.03 0.19	0.00 0.00 0.39 0.39 0.30 0.00 0.02 0.00 0.00 0.00
Level Of Service Module:		
Delay/Veh:	26.2 9.6	0.0 0.0 6.2 6.2 22.1 0.0 20.7 0.0 0.0 0.0
User DelAdj:	1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:	26.2 9.6	0.0 0.0 6.2 6.2 22.1 0.0 20.7 0.0 0.0 0.0
Queue:	0 6	0 0 10 3 3 0 0 0 0 0 0

Table J.7-9 (Continued)

D-AM.CMD		Tue Nov 5, 1996 13:07:19		Page 8-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 9-1	
Reduced Harbor Fill Alternative		Reduced Harbor Fill Alternative		AM Peak Hour	
AM Peak Hour		AM Peak Hour		AM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #5 Maritime St./ 7th St. Extension		Intersection #6 7th St./ 7th St. Extension		Intersection #6 7th St./ 7th St. Extension	
Cycle (sec): 100		Cycle (sec): 100		Cycle (sec): 100	
Loss Time (sec): 8 (Y+R = 4 sec)		Loss Time (sec): 8 (Y+R = 4 sec)		Loss Time (sec): 8 (Y+R = 4 sec)	
Optimal Cycle: 116		Optimal Cycle: 70		Optimal Cycle: 70	
Level Of Service: C		Level Of Service: C		Level Of Service: C	
Approach: North Bound		Approach: North Bound		Approach: North Bound	
Movement: L - T - R		Movement: L - T - R		Movement: L - T - R	
Control: Protected		Control: Protected		Control: Protected	
Rights: Include		Rights: Include		Rights: Include	
Min. Green: 10 20 0		Min. Green: 10 20 0		Min. Green: 10 20 0	
Lanes: 2 0 2 0 0		Lanes: 2 0 2 0 0		Lanes: 2 0 2 0 0	
Volume Module:		Volume Module:		Volume Module:	
Base Vol: 159 0		Base Vol: 159 0		Base Vol: 159 0	
Growth Adj: 1.00 1.00		Growth Adj: 1.00 1.00		Growth Adj: 1.00 1.00	
Initial Bse: 159 0		Initial Bse: 159 0		Initial Bse: 159 0	
Added Vol: 947 335		Added Vol: 947 335		Added Vol: 947 335	
PasserByVol: 0 0		PasserByVol: 0 0		PasserByVol: 0 0	
Initial Fut: 1106 335		Initial Fut: 1106 335		Initial Fut: 1106 335	
User Adj: 1.00 1.00		User Adj: 1.00 1.00		User Adj: 1.00 1.00	
PHF Adj: 1.00 1.00		PHF Adj: 1.00 1.00		PHF Adj: 1.00 1.00	
PHF Volume: 1106 335		PHF Volume: 1106 335		PHF Volume: 1106 335	
Reduct Vol: 0 0		Reduct Vol: 0 0		Reduct Vol: 0 0	
Reduced Vol: 1106 335		Reduced Vol: 1106 335		Reduced Vol: 1106 335	
PCE Adj: 1.00 1.00		PCE Adj: 1.00 1.00		PCE Adj: 1.00 1.00	
MLF Adj: 1.03 1.05		MLF Adj: 1.03 1.05		MLF Adj: 1.03 1.05	
Final Vol: 1139 352		Final Vol: 1139 352		Final Vol: 1139 352	
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane: 1900 1900		Sat/Lane: 1900 1900		Sat/Lane: 1900 1900	
Adjustment: 0.95 1.00		Adjustment: 0.95 1.00		Adjustment: 0.95 1.00	
Lanes: 2.00 2.00		Lanes: 2.00 2.00		Lanes: 2.00 2.00	
Final Sat: 3610 3800		Final Sat: 3610 3800		Final Sat: 3610 3800	
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat: 0.32 0.09		Vol/Sat: 0.32 0.09		Vol/Sat: 0.32 0.09	
Crit Moves: ****		Crit Moves: ****		Crit Moves: ****	
Green/Cycle: 0.35 0.65		Green/Cycle: 0.35 0.65		Green/Cycle: 0.35 0.65	
Volume/Cap: 0.91 0.14		Volume/Cap: 0.91 0.14		Volume/Cap: 0.91 0.14	
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh: 27.7 4.3		Delay/Veh: 27.7 4.3		Delay/Veh: 27.7 4.3	
User DelAdj: 1.00 1.00		User DelAdj: 1.00 1.00		User DelAdj: 1.00 1.00	
AdjDel/Veh: 27.7 4.3		AdjDel/Veh: 27.7 4.3		AdjDel/Veh: 27.7 4.3	
Queue: 34 4		Queue: 34 4		Queue: 34 4	

Table J.7-9 (Continued)

D-AM CMD		Tue Nov 5, 1996 13:07:19		Page 10-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 11-1	
Reduced Harbor Fill Alternative		Reduced Harbor Fill Alternative		AM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		AM Peak Hour	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		AM Peak Hour	
Intersection #8 Adeline St./ 3rd St.		Intersection #9 7th/Middle Harbor Rd		AM Peak Hour	
Cycle (sec): 100		Cycle (sec): 100		Critical Vol./Cap. (X): 0.643	
Loss Time (sec): 12 (Y+R = 4 sec)		Loss Time (sec): 8 (Y+R = 4 sec)		Average Delay (sec/veh): 16.7	
Optimal Cycle: 52		Optimal Cycle: 58		Level Of Service: C	
Approach: North Bound South Bound East Bound West Bound		Approach: North Bound South Bound East Bound West Bound		Level Of Service: C	
Movement: L - T - R L - T - R L - T - R L - T - R		Movement: L - T - R L - T - R L - T - R L - T - R		Level Of Service: C	
Control: Split Phase Split Phase Split Phase Split Phase		Control: Protected Protected Protected Protected		Control: Protected Protected Protected Protected	
Rights: Include Include Include Include		Rights: Include Include Include Include		Rights: Include Include Include Include	
Min. Green: 10 20 20 20 10 20 10 20 10 20 10 20		Min. Green: 10 0 20 0 0 0 0 0 0 0 0 0		Min. Green: 10 0 20 0 0 0 0 0 0 0 0 0	
Lanes: 0 1 0 1 0 0 1 0 1 0 0 1 0 0 1 0 1 0		Lanes: 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0		Lanes: 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0	
Volume Module:		Volume Module:		Volume Module:	
Base Vol: 8 0 31 26 0 26 8 6 29 50 59 56		Base Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Base Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse: 8 0 31 26 0 26 8 6 29 50 59 56		Initial Bse: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Initial Bse: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Added Vol: 0 793 0 0 1048 0 0 0 0 0 0 0 0 0 0 0 0		Added Vol: 17 0 368 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Added Vol: 17 0 368 0 0 0 0 0 0 0 0 0 0 0 0	
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut: 8 793 31 26 1048 26 8 6 29 50 59 56		Initial Fut: 17 0 368 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Initial Fut: 17 0 368 0 0 0 0 0 0 0 0 0 0 0 0	
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume: 8 793 31 26 1048 26 8 6 29 50 59 56		PHF Volume: 17 0 368 0 0 0 0 0 0 0 0 0 0 0 0 0 0		PHF Volume: 17 0 368 0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MUF Adj: 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05		MUF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		MUF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Final Vol.: 8 832 33 27 1100 27 8 6 29 53 62 59		Final Vol.: 17 0 368 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Final Vol.: 17 0 368 0 0 0 0 0 0 0 0 0 0 0 0	
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900		Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900		Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment: 0.99 0.99 0.99 1.00 1.00 1.00 0.97 0.97 0.85 0.94 0.94 0.94		Adjustment: 0.95 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Adjustment: 0.95 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Lanes: 0.02 1.91 0.07 0.05 1.90 0.05 0.57 0.43 1.00 0.61 0.71 0.68		Lanes: 1.00 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01		Lanes: 1.00 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.01	
Final Sat.: 34 3585 142 89 3622 89 1053 790 1615 1089 1273 1212		Final Sat.: 1805 0 1615 0 0 0 0 0 0 0 3772 28 1805 3794 6		Final Sat.: 1805 0 1615 0 0 0 0 0 0 0 3772 28 1805 3794 6	
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat: 0.23 0.23 0.23 0.30 0.30 0.30 0.01 0.01 0.02 0.05 0.05 0.05		Vol/Sat: 0.01 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.14 0.14 0.22 0.17		Vol/Sat: 0.01 0.00 0.23 0.00 0.00 0.00 0.00 0.00 0.14 0.14 0.22 0.17	
Crit Moves: ****		Crit Moves: ****		Crit Moves: ****	
Green/Cycle: 0.21 0.21 0.21 0.27 0.27 0.27 0.20 0.20 0.20 0.20 0.20 0.20		Green/Cycle: 0.35 0.00 0.35 0.00 0.00 0.00 0.00 0.00 0.22 0.22 0.34 0.57		Green/Cycle: 0.35 0.00 0.35 0.00 0.00 0.00 0.00 0.00 0.22 0.22 0.34 0.57	
Volume/Cap: 1.12 1.12 1.12 1.12 1.12 1.12 0.04 0.04 0.09 0.24 0.24 0.24		Volume/Cap: 0.03 0.00 0.64 0.00 0.00 0.00 0.00 0.00 0.64 0.64 0.64 0.30		Volume/Cap: 0.03 0.00 0.64 0.00 0.00 0.00 0.00 0.00 0.64 0.64 0.64 0.30	
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh: 91.7 91.7 91.7 86.3 86.3 86.3 20.8 20.8 21.1 21.8 21.8 21.8		Delay/Veh: 13.6 0.0 19.2 0.0 0.0 0.0 0.0 0.0 24.0 24.0 19.5 7.4		Delay/Veh: 13.6 0.0 19.2 0.0 0.0 0.0 0.0 0.0 24.0 24.0 19.5 7.4	
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh: 91.7 91.7 91.7 86.3 86.3 86.3 20.8 20.8 21.1 21.8 21.8 21.8		AdjDel/Veh: 13.6 0.0 19.2 0.0 0.0 0.0 0.0 0.0 24.0 24.0 19.5 7.4		AdjDel/Veh: 13.6 0.0 19.2 0.0 0.0 0.0 0.0 0.0 24.0 24.0 19.5 7.4	
Queue: 1 42 3 3 54 3 0 0 1 1 1 1		Queue: 0 0 9 0 0 0 0 0 0 0 14 0		Queue: 0 0 9 0 0 0 0 0 0 0 14 0	

Table J.7-9 (Continued)

D-AM, CMD	Tue Nov 5, 1996 13:07:19	Page 12-1	D-AM, CMD	Tue Nov 5, 1996 13:07:19	Page 13-1
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour			FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative AM Peak Hour		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)		
Intersection #10 New Harbor/Mid Harbor Rd			Intersection #12 Maritime St./ W. Grand Ave./ I-880 Ramps		
Cycle (sec):	100	Critical Vol./Cap. (X):	100	Critical Vol./Cap. (X):	0.525
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	10 (Y+R = 4 sec)	Average Delay (sec/veh):	16.6
Optimal Cycle:	94	Level Of Service:	70	Level Of Service:	C
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected
Rights:	Ovl	Include	Include	Include	Include
Min. Green:	10 0 20	0 0 0	0 0 20	10 20	10 20 20
Lanes:	1 0 0 0 1	0 0 0 0 0	0 0 1 1 0	1 0 1 1 1	1 0 1 1 0
Volume Module:			Volume Module:		
Base Vol:	0 0 0	0 0 0	0 33	0 16 28	47 48 394 438
Growth Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00
Initial Bse:	0 0 0	0 0 0	0 33	0 16 28	47 48 394 438
Added Vol:	368 0 512	0 0 0	0 63	0 0 0	0 0 0 484 81
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0 0 0
Initial Fut:	368 0 512	0 0 0	297 33	63 16 28	47 48 394 922
User Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00
PHF Volume:	368 0 512	0 0 0	297 33	63 16 28	47 48 394 922
Reduced Vol:	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0 0 0
Reduced Vol:	368 0 512	0 0 0	297 33	63 16 28	47 48 394 922
PCE Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00
MLF Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00
Final Vol:	368 0 512	0 0 0	306 33	63 16 28	47 48 394 968
Saturation Flow Module:			Saturation Flow Module:		
Sat/Lane:	1900 1900	1900 1900 1900	1900 1900	1900 1900	1900 1900 1900
Adjustment:	0.95 1.00	0.85 1.00 1.00	0.95 0.90	0.91 0.91	0.85 0.95 1.00 1.00
Lanes:	1.00 0.00	1.00 0.00 0.00	2.00 0.34	0.66 1.00 0.37	0.63 1.00 1.00 2.00
Final Sat:	1805 0 1615	0 0 0	3610 588	1122 1805 645	1084 1805 1900 3230
Capacity Analysis Module:			Capacity Analysis Module:		
Vol/Sat:	0.20 0.00	0.12 0.00 0.00	0.06 0.01	0.04 0.03	0.21 0.30 0.04 0.09
Crit Moves:	0.23 0.00	0.64 0.00 0.00	0.08 0.06	0.06 0.01	0.04 0.03 0.04 0.09
Green/Cycle:	0.23 0.00	0.64 0.00 0.00	0.13 0.22	0.22 0.11	0.20 0.20 0.19 0.47
Volume/Cap:	0.89 0.00	0.49 0.00 0.00	0.64 0.25	0.25 0.08	0.22 0.22 0.14 0.44
Level Of Service Module:			Level Of Service Module:		
Delay/Veh:	38.3 0.0	6.4 0.0 0.0	28.6 20.8	20.8 25.8	21.7 21.8 11.6 13.5
User DelAdj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00
AdjDel/Veh:	38.3 0.0	6.4 0.0 0.0	28.6 20.8	20.8 25.8	21.7 21.8 11.6 13.5
Queue:	12 0 8	0 0 0	8 1	1 0 1	1 7 21 2 6

Table J.7-9 (Continued)

Tue Nov 5, 1996 13:07:19

FISCO/Port Vision 2000 EIS/EIR

Reduced Harbor Fill Alternative

AM Peak Hour

Level of Service Computation Report

1994 HCM Operations Method (Future Volume Alternative)

Intersection #13 Adeline St. / 5th St. / I-880 SB Ramp

Cycle (sec): 100

Loss Time (sec): 12 (Y+R = 4 sec)

Optimal Cycle: 87

Critical Vol./Cap. (X): 0.838

Average Delay (sec/veh): 24.3

Level Of Service: C

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected

Rights: Ovl Include Include Include

Min. Green: 10 20 20 10 20 20 10 10 20 10 20 20

Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 0 1 1

Volume Module:

Base Vol: 0 0 0 72 109 165 256 51 0 0 169 364

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 0 0 72 109 165 256 51 0 0 169 364

Added Vol: 198 153 442 0 209 0 0 0 270 570 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 198 153 442 72 318 165 256 51 270 570 169 364

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 198 153 442 72 318 165 256 51 270 570 169 182

Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 198 153 442 72 318 165 256 51 270 570 169 182

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MULF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 198 153 442 72 333 173 282 56 297 570 177 191

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adj: 0.95 1.00 0.85 0.95 0.95 0.95 0.91 0.91 0.91 0.95 0.92 0.92

Lanes: 1.00 1.00 1.00 1.00 1.32 0.68 1.67 0.33 1.00 1.00 0.96 1.04

Final Sat.: 1805 1900 1615 1805 2376 1234 2890 574 1732 1805 1682 1815

Capacity Analysis Module:

Vol/Sat: 0.11 0.08 0.27 0.04 0.14 0.14 0.10 0.10 0.17 0.32 0.11 0.11

Crit Moves: ****

Green/Cycle: 0.12 0.22 0.58 0.10 0.20 0.20 0.20 0.20 0.20 0.36 0.36 0.36

Volume/Cap: 0.89 0.36 0.47 0.40 0.70 0.70 0.49 0.49 0.86 0.89 0.30 0.30

Level Of Service Module:

Delay/Veh: 50.0 21.2 8.1 28.0 26.2 26.2 23.1 23.1 31.9 29.5 15.0 15.0

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 50.0 21.2 8.1 28.0 26.2 26.2 23.1 23.1 31.9 29.5 15.0 15.0

Queue: 7 4 7 2 9 5 7 1 10 17 4 4

Table J.7-9 (Continued)

D-AM,CMD Tue Nov 5, 1996 13:07:19 Page 16-1

FISCO/Port Vision 2000 EIS/EIR
Reduced Harbor Fill Alternative
AM Peak Hour

1994 HCM Operations Method (Future Volume Alternative)																
Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.																
Cycle (sec):	100	Critical Vol./Cap. (X):										0.565				
Loss Time (sec):	10 (Y+R = 4 sec)	Average Delay (sec/veh)										21.3				
Optimal Cycle:	70	Level Of Service										C				
Approach:	North Bound			South Bound			East Bound			West Bound						
Movement:	L	T	R	L	T	R	L	T	R	L	T	R				
Control:	Protected			Protected			Protected			Protected						
Rights:	Include			Ovl			Include			Include						
Min. Green:	10	20	20	10	20	20	10	20	20	0	20	20				
Lanes:	2	0	0	1	0	0	2	1	0	2	0	0	0	1	1	0
Volume Module:																
Base Vol:	0	548	21	17	0	94	0	16	0	0	62	1				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	0	548	21	17	0	94	0	16	0	0	62	1				
Added Vol:	697	0	0	0	0	365	314	4	0	0	19	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	697	548	21	17	0	459	314	20	0	0	81	1				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Volume:	697	548	21	17	0	459	314	20	0	0	81	1				
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	697	548	21	17	0	459	314	20	0	0	81	1				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.03	1.00	1.00	1.00	1.00	1.13	1.00	1.05	1.00	1.00	1.05	1.05				
Final Vol:	718	548	21	17	0	518	314	21	0	0	85	1				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.95	0.99	0.99	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	1.00				
Lanes:	2.00	0.96	0.04	1.00	0.00	2.00	1.00	2.00	0.00	0.00	1.98	0.02				
Final Sat:	3610	1812	69	1805	0	3230	1805	3800	0	0	3756	44				
Capacity Analysis Module:																
Vol/Sat:	0.20	0.30	0.30	0.01	0.00	0.16	0.17	0.01	0.00	0.00	0.02	0.02				
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	***				
Green/Cycle:	0.28	0.38	0.38	0.10	0.00	0.42	0.22	0.42	0.00	0.00	0.20	0.20				
Volume/Cap:	0.71	0.79	0.79	0.09	0.00	0.38	0.79	0.01	0.00	0.00	0.11	0.11				
Level Of Service Module:																
Delay/Veh:	22.5	22.0	22.0	26.4	0.0	13.1	31.2	11.0	0.0	0.0	21.2	21.2				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	22.5	22.0	22.0	26.4	0.0	13.1	31.2	11.0	0.0	0.0	21.2	21.2				
Queue:	18	15	1	0	0	10	9	0	0	0	2	0				

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D-AM,CMD Tue Nov 5, 1996 13:07:19 Page 17-1

FISCO/Port Vision 2000 EIS/EIR
Reduced Harbor Fill Alternative
AM Peak Hour

Level Of Service Computation Report														
1994 HCM Operations Method (Future Volume Alternative)														
Intersection #16 7th St./ I-880 SB Ramps														
Cycle (sec):	100	Critical Vol./Cap. (X):										0.414		
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):										1.4		
Optimal Cycle:	35	Level Of Service:										A		
Approach: North Bound South Bound East Bound West Bound														
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	0	0	0	0	0	0	0	0	0	20	20	10	20	20
Lanes:	0	0	0	0	0	0	0	0	0	2	0	1	2	0
Volume Module:														
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	65	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	65	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	318	605	0	1081	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	0	0	318	605	65	1081	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	0	0	0	318	605	65	1081	0
Reduc Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	0	0	318	605	65	1081	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.00	1.03	1.05	1.00
Final Vol.:	0	0	0	0	0	0	0	0	0	334	605	67	1135	0
Saturation Flow Module:														
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.95	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	2.00	2.00	0.00
Final Sat.:	0	0	0	0	0	0	0	0	0	3800	1615	3610	3800	0
Capacity Analysis Module:														
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.37	0.02	0.30	0.00
Crit Moves:	*****													
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.85	0.10	0.95	0.00	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.44	0.19	0.31	0.00
Level Of Service Module:														
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.3	26.7	0.1	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.3	26.7	0.1	0.0	0.0
Queue:	0	0	0	0	0	0	0	0	2	4	2	2	2	0

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Table J.7-9 (Continued)

D-AM.CMD Tue Nov 5, 1996 13:07:19 Page 18-1

FISCO/Port Vision 2000 EIS/EIR
Reduced Harbor Fill Alternative
AM Peak Hour

Level Of Service Computation Report													
1994 HCM Unsignalized Method (Future Volume Alternative)													
Intersection #17 14th St./ I-880 Frontage Rd.													
Average Delay (sec/veh):	3.0			Worst Case Level Of Service: C									
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Uncontrolled			Uncontrolled			Uncontrolled			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0 0 1 1 0	1 0 2 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	1 0 0 0 1						
Volume Module:													
Base Vol:	0	0	89	30	0	0	0	0	0	0	140	0	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	89	30	0	0	0	0	0	0	140	0	6
Added Vol:	0	314	0	0	365	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	314	89	30	365	0	0	0	0	0	140	0	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	314	89	30	365	0	0	0	0	0	140	0	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	314	89	30	365	0	0	0	0	0	140	0	6
Adjusted Volume Module:													
Grade:	0%			0%			0%			0%			
* Cycle/Cars:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
* Truck/Comb:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
PCE Adj:	1.10	1.00	1.00	1.10	1.00	1.00	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Cycl/Car PCE:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Trck/Cmb PCE:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Adj Vol.:	0	314	89	33	365	0	0	0	0	0	154	0	7
Critical Gap Module:													
MoveUp Time:xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	3.4	xxxx	2.6
Critical Gap:xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	7.0	xxxx	5.5
Capacity Module:													
Conflict Vol:	xxxx	xxxx	xxxx	403	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	753	xxxx	201
Potent Cap.:	xxxx	xxxx	xxxx	1042	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	349	xxxx	1095
Adj Cap:	xxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.97	xxxx	1.00
Move Cap.:	xxxx	xxxx	xxxx	1042	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	338	xxxx	1095
Level Of Service Module:													
Stopped Del:xxxx	xxxx	xxxx	xxxx	3.6	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	18.1	xxxx	3.3
LOS by Move:	*	*	*	A	*	*	*	*	*	*	C	*	A
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shrd StpDel:xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.5	0.0	17.5

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J.7-122

D-AM.CMD Tue Nov 5, 1996 13:07:19 Page 19-1

FISCO/Port Vision 2000 EIS/EIR
Reduced Harbor Fill Alternative
AM Peak Hour

Level Of Service Computation Report													
1994 HCM Operations Method (Future Volume Alternative)													
Intersection #18 W.Grand Ave./ I-880 Frontage Rd.													
Cycle (sec):	100	Critical Vol./Cap. (X): 0.456											
Loss Time (sec):	11 (V+R = 4 sec)	Average Delay (sec/veh): 21.7											
Optimal Cycle:	81	Level Of Service: C											
Approach:	North Bound	South Bound	East Bound	West Bound									
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Split Phase	Split Phase	Split Phase	Split Phase	Split Phase	Split Phase	Split Phase	Split Phase	Split Phase	Split Phase	Split Phase	Split Phase	Split Phase
Rights:	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include	Include
Min. Green:	10	20	20	10	20	20	10	20	20	10	20	20	20
Lanes:	1	0	1	0	1	1	0	1	0	1	0	1	1
Volume Module:													
Base Vol:	9	0	0	678	48	6	65	234	12	0	152	449	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	9	0	0	678	48	6	65	234	12	0	152	449	
Added Vol:	0	162	152	0	193	0	0	63	0	172	81	0	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	9	162	152	678	241	6	65	297	12	172	233	449	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Volume:	9	162	152	678	241	6	65	297	12	172	233	449	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	9	162	152	678	241	6	65	297	12	172	233	449	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.05	1.05	1.05	1.00	1.00	1.00	1.05	1.05	1.00	1.10	1.10	
Final Vol.:	9	170	160	712	241	6	65	312	13	172	256	494	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.95	0.93	0.93	0.95	1.00	1.00	0.95	0.99	0.99	0.95	0.90	0.90	
Lanes:	1.00	1.03	0.97	2.00	0.98	0.02	1.00	1.92	0.08	1.00	1.02	1.98	
Final Sat.:	1805	1821	1713	3610	1854	46	1805	3612	150	1805	1751	3379	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.09	0.09	0.20	0.13	0.13	0.04	0.09	0.09	0.10	0.15	0.15	
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****	
Green/Cycle:	0.20	0.20	0.20	0.34	0.34	0.34	0.10	0.23	0.23	0.12	0.25	0.25	
Volume/Cap:	0.02	0.47	0.47	0.58	0.38	0.38	0.36	0.37	0.37	0.81	0.58	0.58	
Level Of Service Module:													
Delay/Veh:	20.8	23.2	23.2	18.0	16.3	16.3	27.7	20.9	20.9	42.1	21.7	21.7	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	20.8	23.2	23.2	18.0	16.3	16.3	27.7	20.9	20.9	42.1	21.7	21.7	
Queue:	0	4	4	17	5	0	2	7	0	6	6	12	

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Table J.7-10

D-PM.CMD		Tue Nov 5, 1996 10:50:38				Page 1-1		
		FISCO/Port Vision 2000 EIS/EIR						
		Reduced Harbor Fill Alternative						
		PM Peak Hour						
		Trip Generation Report						
		Forecast for PM Peak Hour						
Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total % Of Trips Total

1	New Harbor	1088.00	Employees	0.06	0.22	65	239	304 5.4
	Zone 1 Subtotal					65	239	304 5.4

3	J.I.T.	343.00	Employees	0.10	0.36	34	123	157 2.8
	Zone 3 Subtotal					34	123	157 2.8

6	Middle Harbr	516.00	Employees	0.06	0.22	31	114	145 2.6
	Zone 6 Subtotal					31	114	145 2.6

7	7th St Harbr	613.00	Employees	0.06	0.22	37	135	172 3.0
	Zone 7 Subtotal					37	135	172 3.0

8	Outer Harbor	706.00	Employees	0.06	0.21	42	148	190 3.4
	Zone 8 Subtotal					42	148	190 3.4

10	New Park	1.00	Total Trips	55.00	96.00	55	96	151 2.7
	Zone 10 Subtotal					55	96	151 2.7

11	New Harbor	1.00	Trucks Inter	229.00	274.00	229	274	503 8.9
	Zone 11 Subtotal					229	274	503 8.9

16	Middle Harbr	1.00	Trucks Inter	109.00	130.00	109	130	239 4.2
	Zone 16 Subtotal					109	130	239 4.2

17	7th St Harbr	1.00	Trucks Inter	129.00	155.00	129	155	284 5.0
	Zone 17 Subtotal					129	155	284 5.0

18	Outer Harbor	1.00	Trucks Inter	148.00	178.00	148	178	326 5.8
	Zone 18 Subtotal					148	178	326 5.8

21	New Harbor	1.00	Truck External	407.00	488.00	407	488	895 15.8
	Zone 21 Subtotal					407	488	895 15.8

23	J.I.T.	1.00	Truck External	353.00	423.00	353	423	776 13.7
	Zone 23 Subtotal					353	423	776 13.7

26	Middle Harbr	1.00	Truck External	193.00	232.00	193	232	425 7.5
	Zone 26 Subtotal					193	232	425 7.5

27	7th St Harbr	1.00	Truck External	229.00	275.00	229	275	504 8.9
	Zone 27 Subtotal					229	275	504 8.9

28	Outer Harbor	1.00	Truck External	264.00	316.00	264	316	580 10.3

TOTAL						2325	3326	5651 100.0

		Zone 28 Subtotal				264	316	580 10.3

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J.7-123

Table J.7-10 (Continued)

D-PM.CMD													Tue Nov 5, 1996 10:50:38													Page 2-1												
FISCO/Port Vision 2000 EIS/EIR													FISCO/Port Vision 2000 EIS/EIR													Page 3-1												
Reduced Harbor Fill Alternative													Reduced Harbor Fill Alternative																									
PM Peak Hour													PM Peak Hour																									
Trip Distribution Report													Turning Movement Report																									
Percent Of Trips Existing													PM Peak Hour																									
Zone													Volume													Total												
3 4 5 11 12 13 14 15 16													Type Left Thru Right													Left Thru Right												
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Table J.7-10 (Continued)

D-PM.CMD										Tue Nov 5, 1996 10:50:38										Page 3-2									
FISCO/Port Vision 2000 EIS/EIR										FISCO/Port Vision 2000 EIS/EIR										FISCO/Port Vision 2000 EIS/EIR									
Reduced Harbor Fill Alternative										Reduced Harbor Fill Alternative										Reduced Harbor Fill Alternative									
PM Peak Hour										PM Peak Hour										PM Peak Hour									

Table J.7-10 (Continued)

D-PM.CMD				Tue Nov 5, 1996 10:50:38				D-PM.CMD				Tue Nov 5, 1996 10:50:38				Page 3-4				Page 3-5			
				FISCO/Port Vision 2000 EIS/EIR				FISCO/Port Vision 2000 EIS/EIR				Reduced Harbor Fill Alternative				Reduced Harbor Fill Alternative				PM Peak Hour			
				PM Peak Hour				PM Peak Hour				PM Peak Hour				PM Peak Hour				PM Peak Hour			
Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total	Volume	Northbound	Southbound	Eastbound	Westbound	Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Left	Thru	Right	Left	Thru	Right
#204																							
Base	0	0	0	-375	-668	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	414	783	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	39	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#207																							
Base	0	-463	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	525	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#214																							
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#217																							
Base	0	0	0	0	-19	0	0	0	0	-47	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	9	0	0	0	0	67	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	-10	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0
#218																							
Base	0	-39	0	0	0	0	0	0	-31	-16	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	22	0	0	0	0	0	0	50	16	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	-17	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#219																							
Base	0	-70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#220																							
Base	0	0	0	0	-19	-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	9	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	-10	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#225																							
Base	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#226																							
Base	0	0	0	0	-16	0	0	0	0	-375	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	16	0	0	0	0	414	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	39	0	0	0	0	0	0	0	0	0	0	0	0	0

Table J.7-10 (Continued)

D-PM.CMD		Tue Nov 5, 1996 10:50:38										Page 4-1		D-PM.CMD		Tue Nov 5, 1996 10:50:38										Page 4-2	
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour														FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour													
Link Volume Report PM Peak Hour														Link Volume Report PM Peak Hour													
Volume		NB Link		SB Link		EB Link		WB Link		Total		Volume		NB Link		SB Link		EB Link		WB Link		Total					
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	Type	In	Out	Total	In	Out	Total	In	Out	Total					
#13 Adeline St./ 5th St./ I-880 SB Ramp																											
Base	0	0	0	310	754	1064	295	271	566	818	398	1216	2846														
Added	979	640	1620	124	194	318	161	251	412	355	534	889	3239														
Total	979	640	1620	434	948	1382	456	522	978	1173	932	2105	6085														
#14 Union St./ 5th St./ I-880 North Ramps																											
Base	475	194	669	174	259	433	146	61	207	97	378	475	1784														
Added	161	251	412	0	0	0	0	0	0	0	251	161	412	824													
Total	636	445	1081	174	259	433	146	61	207	348	539	887	2608														
#15 7th St./ I-880 NB Ramps / Frontage Rd.																											
Base	200	0	200	207	198	405	108	258	366	54	113	167	1138														
Added	478	0	478	288	417	705	434	770	1204	5	17	22	2408														
Total	678	0	678	495	615	1110	542	1028	1570	59	130	189	3546														
#16 7th St./ I-880 SB Ramps																											
Base	0	385	385	0	0	0	7	0	7	378	0	378	770														
Added	0	663	663	0	0	0	1097	770	1867	770	434	1204	3734														
Total	0	1048	1048	0	0	0	1104	770	1874	1148	434	1582	4504														
#17 14th St./ I-880 Frontage Rd.																											
Base	192	115	307	4	69	73	0	0	0	122	134	256	636														
Added	417	288	705	288	417	705	0	0	0	0	0	0	1409														
Total	609	403	1012	292	486	778	0	0	0	122	134	256	2045														
#18 W.Grand Ave./ I-880 Frontage Rd.																											
Base	147	3	150	765	488	1253	366	537	903	786	1036	1822	4128														
Added	417	288	705	128	183	312	74	51	125	210	308	518	1660														
Total	564	291	855	893	671	1565	440	588	1028	996	1344	2340	5788														
#134																											
Base	0	0	0	0	0	0	0	0	0	0	0	0	0														
Added	615	737	1352	0	0	0	546	387	933	1124	1161	2285	4570														
Total	615	737	1352	0	0	0	546	387	933	1124	1161	2285	4570														
#138																											
Base	-168	-123	-291	-147	-188	-335	-20	-24	-44	0	0	0	-670														
Added	0	0	0	0	0	0	0	0	0	0	0	0	0														
Total	-168	-123	-291	-147	-188	-335	-20	-24	-44	0	0	0	-670														
#158																											
Base	-422	0	-422	0	-259	-259	0	0	0	0	-163	-163	-844														
Added	486	0	486	0	331	331	0	0	0	0	155	155	971														
Total	64	0	64	0	72	72	0	0	0	0	-8	-8	127														
#12 Maritime St./ W.Grand Ave./ I-880 Ramps																											
Base	23	233	256	55	56	111	684	647	1331	637	463	1100	2798														
Added	513	300	813	0	0	249	439	687	51	74	125	1625	4425														
Total	536	533	1069	55	56	111	933	1086	2018	688	537	1225	5423														

Table J.7-10 (Continued)

D-PM.CMD				Tue Nov 5, 1996 10:50:38												Page 4-3										
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour																										
Volume		NB Link		SB Link		EB Link		WB Link		Total		Volume		NB Link		SB Link		EB Link		WB Link		Total				
Type	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	Type	In	Out	Total	In	Out	Total	In	Out	Total	Type	In	Out	Total
#159													#204													
Base	-259	0	-259	0	0	0	-364	-364	-105	0	-105	-728	Base	0	-668	-668	-1043	0	-1043	0	0	0	-375	-375	-2086	
Added	331	0	331	0	0	0	426	426	95	0	95	852	Added	0	783	783	1197	0	1197	0	0	0	0	414	414	2393
Total	72	0	72	0	0	0	62	62	-10	0	-10	124	Total	0	115	115	154	0	154	0	0	0	0	39	39	307
#160													#207													
Base	0	-105	-105	0	0	0	-259	-259	-364	0	-364	-728	Base	-463	0	-463	0	-741	-741	0	0	0	-278	0	-278	-1482
Added	0	95	95	0	0	0	331	331	426	0	426	852	Added	525	0	525	0	833	833	0	0	0	308	0	308	1666
Total	0	-10	-10	0	0	0	72	72	62	0	62	124	Total	62	0	62	0	92	92	0	0	0	30	0	30	184
#161													#214													
Base	0	-255	-255	-105	0	-105	-150	0	-150	0	0	-510	Base	0	-350	-350	0	0	0	0	-391	-391	-741	0	-741	-1482
Added	0	273	273	95	0	95	178	0	178	0	0	547	Added	0	355	355	0	0	0	0	478	478	833	0	833	1666
Total	0	18	18	-10	0	-10	28	0	28	0	0	37	Total	0	5	5	0	0	0	0	87	87	92	0	92	184
#165													#217													
Base	0	-660	-660	-126	0	-126	-534	0	-534	0	0	-1320	Base	0	-19	-19	-19	0	-19	-47	0	-47	0	-47	-47	-132
Added	0	823	823	161	0	161	663	0	663	0	0	1647	Added	0	9	9	9	0	9	67	0	67	0	67	67	151
Total	0	163	163	35	0	35	129	0	129	0	0	327	Total	0	-10	-10	-10	0	-10	20	0	20	0	20	20	19
#170													#218													
Base	-596	0	-596	0	-205	-205	0	0	0	0	-391	-1192	Base	-39	0	-39	0	-70	-70	-47	0	-47	0	-16	-16	-172
Added	729	0	729	0	251	251	0	0	0	0	478	1457	Added	22	0	22	0	73	73	67	0	67	0	16	16	178
Total	133	0	133	0	46	46	0	0	0	0	87	265	Total	-17	0	-17	0	3	3	20	0	20	0	0	0	6
#177													#219													
Base	0	-214	-214	-214	0	-214	-163	0	-163	0	-163	-754	Base	-70	0	-70	0	-70	-70	0	-5	-5	0	-5	-150	
Added	0	265	265	265	0	265	155	0	155	0	155	840	Added	73	0	73	0	73	73	0	5	5	0	5	155	
Total	0	51	51	51	0	51	-8	0	-8	0	-8	86	Total	3	0	3	0	3	3	0	-0	-0	0	-0	0	5
#178													#220													
Base	-323	0	-323	0	-439	-439	-163	0	-163	0	-47	-972	Base	0	-19	-19	-37	0	-37	0	-23	-23	-5	0	-5	-84
Added	387	0	387	0	476	476	155	0	155	0	67	1085	Added	0	9	9	39	0	39	0	35	35	5	0	5	88
Total	64	0	64	0	37	37	-8	0	-8	0	20	113	Total	0	-10	-10	2	0	2	0	12	12	-0	0	-0	4
#182													#225													
Base	-439	0	-439	-297	-439	-736	0	-297	-297	0	0	-1472	Base	0	0	0	0	-5	-5	0	-278	-278	-283	0	-283	-566
Added	476	0	476	325	476	801	0	325	325	0	0	1601	Added	0	0	0	0	5	5	0	308	308	312	0	312	624
Total	37	0	37	28	37	65	0	28	28	0	0	129	Total	0	0	0	0	-0	-0	0	30	30	29	0	29	58
#201													#226													
Base	0	0	0	0	0	0	-1043	0	-1043	0	-1043	-208	Base	0	0	0	-16	0	-16	-375	0	-375	0	-391	-391	-782
Added	0	0	0	0	0	0	1197	0	1197	0	1197	2393	Added	0	0	0	16	0	16	414	0	414	0	430	430	861
Total	0	0	0	0	0	0	154	0	154	0	154	307	Total	0	0	0	0	0	0	39	0	39	0	39	39	79

Table J.7-10 (Continued)

D-PM.CMD				Tue Nov 5, 1996 10:50:38				Page 4-5				D-PM.CMD				Tue Nov 5, 1996 10:50:39				Page 5-1			
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour												FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour											
Impact Analysis Report Level Of Service												Impact Analysis Report Level Of Service											
Intersection				Base				Future				Change											
				Del/ V/				Del/ V/				in											
				LOS Veh C				LOS Veh C															
#	3	Maritime St./ Burma St.		B	7.2	0.211	B	9.4	0.318		+ 2.270	D/V											
#	4	Maritime St./ 14th St.		C	15.9	0.392	C	19.8	0.760		+ 3.876	D/V											
#	5	Maritime St./ 7th St. Extension		B	5.8	0.080	B	14.0	0.695		+ 8.229	D/V											
#	6	7th St./ 7th St. Extension		C	20.9	0.000	B	14.7	0.670		-6.129	D/V											
#	8	Adeline St./ 3rd St.		C	20.4	0.084	F	72.1	0.668		+51.744	D/V											
#	9	7th/Middle Harbor Rd		C	15.8	0.000	C	17.2	0.630		+ 1.404	D/V											
#	10	New Harbor/Mid Harbor Rd			0.0	0.000	C	16.3	0.673		+16.281	D/V											
#	12	Maritime St./ W.Grand Ave./ I-	B	12.4	0.237	C	18.8	0.410		+ 6.398	D/V												
#	13	Adeline St./ 5th St./ I-880 SB	C	17.6	0.328	D	30.8	0.510		+13.115	D/V												
#	14	Union St./ 5th St./ I-880 Nort	B	12.5	0.178	C	16.8	0.227		+ 4.359	D/V												
#	15	7th St./ I-880 NB Ramps / Fron	B	11.5	0.135	C	18.7	0.426		+ 7.286	D/V												
#	16	7th St./ I-880 SB Ramps	A	2.6	0.113	B	5.6	0.550		+ 3.004	D/V												
#	17	14th St./ I-880 Frontage Rd.	A	1.9	0.000	C	2.3	0.000		+ 0.000	V/C												
#	18	W.Grand Ave./ I-880 Frontage R	C	21.1	0.505	C	22.8	0.658		+ 1.696	D/V												

Table J.7-10 (Continued)

D-PM.CMD		Tue Nov 5, 1996 10:50:39		Page 6-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 7-1	
Reduced Harbor Fill Alternative		Reduced Harbor Fill Alternative		PM Peak Hour	
Level of Service Computation Report		Level of Service Computation Report		Level of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #3 Maritime St./ Burma St.		Intersection #4 Maritime St./ 14th St.		Intersection #4 Maritime St./ 14th St.	
Cycle (sec): 100		Cycle (sec): 100		Cycle (sec): 100	
Loss Time (sec): 8 (Y+R = 4 sec)		Loss Time (sec): 8 (Y+R = 4 sec)		Loss Time (sec): 8 (Y+R = 4 sec)	
Optimal Cycle: 58		Optimal Cycle: 58		Optimal Cycle: 58	
Level of Service: H		Level of Service: C		Level of Service: C	
Approach: North Bound South Bound East Bound West Bound		Approach: North Bound South Bound East Bound West Bound		Approach: North Bound South Bound East Bound West Bound	
Movement: L - T - R L - T - R L - T - R L - T - R		Movement: L - T - R L - T - R L - T - R L - T - R		Movement: L - T - R L - T - R L - T - R	
Control: Protected Include Protected Include Protected Include		Control: Protected Include Protected Include Protected Include		Control: Protected Include Protected Include Protected Include	
Rights: 10 20 20 10 20 20 10 20 20 10 20 20		Rights: 10 20 20 10 20 20 10 20 20 10 20 20		Rights: 10 20 20 10 20 20 10 20 20 10 20 20	
Min. Green: 1 0 1 0 1 0 1 0 1 0 1 0		Min. Green: 1 0 1 0 1 0 1 0 1 0 1 0		Min. Green: 1 0 1 0 1 0 1 0 1 0 1 0	
Lanes: 1 0 1 0 1 0 1 0 1 0 1 0		Lanes: 1 0 1 0 1 0 1 0 1 0 1 0		Lanes: 1 0 1 0 1 0 1 0 1 0 1 0	
Volume Module:		Volume Module:		Volume Module:	
Base Vol: 5 590 0 0 109 0 0 0 0 50 0 0		Base Vol: 0 414 28 105 132 0 0 0 0		Base Vol: 0 414 28 105 132 0 0 0 0	
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse: 5 590 0 0 109 0 0 0 0 50 0 0		Initial Bse: 0 414 28 105 132 0 0 0 0		Initial Bse: 0 414 28 105 132 0 0 0 0	
Added Vol: 0 355 0 0 210 90 0 0 0 0 0 0		Added Vol: 298 258 0 0 144 66 98 0 387 0 0 0		Added Vol: 298 258 0 0 144 66 98 0 387 0 0 0	
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0		PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0		PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0	
Initial Fut: 5 945 0 0 319 90 158 0 50 0 0 0		Initial Fut: 298 672 28 105 276 66 98 0 387 92 0 290		Initial Fut: 298 672 28 105 276 66 98 0 387 92 0 290	
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Volume: 5 945 0 0 319 90 158 0 50 0 0 0		PHF Volume: 298 672 28 105 276 66 98 0 387 92 0 290		PHF Volume: 298 672 28 105 276 66 98 0 387 92 0 290	
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0		Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0		Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0	
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj: 1.00 1.05 1.05 1.00 1.05 1.05 1.00 1.05 1.00 1.05 1.00 1.00		MLF Adj: 1.00 1.05 1.05 1.00 1.05 1.05 1.00 1.05 1.00 1.05 1.00 1.00		MLF Adj: 1.00 1.05 1.05 1.00 1.05 1.05 1.00 1.05 1.00 1.05 1.00 1.00	
Final Vol: 5 993 0 0 335 95 158 0 50 0 0 0		Final Vol: 298 705 29 105 289 69 98 0 387 92 0 290		Final Vol: 298 705 29 105 289 69 98 0 387 92 0 290	
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900		Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900		Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment: 0.95 1.00 1.00 0.97 0.97 0.95 1.00 0.85 1.00 1.00 1.00 1.00		Adjustment: 0.95 0.99 0.99 0.95 0.97 0.97 0.58 1.00 0.58 0.40 1.00 0.85		Adjustment: 0.95 0.99 0.99 0.95 0.97 0.97 0.58 1.00 0.58 0.40 1.00 0.85	
Lanes: 1.00 2.00 0.00 1.00 1.56 0.44 1.00 0.00 1.00 0.00 0.00 0.00		Lanes: 1.00 1.92 0.08 1.00 1.61 0.39 0.20 0.00 0.80 1.00 0.00 1.00		Lanes: 1.00 1.92 0.08 1.00 1.61 0.39 0.20 0.00 0.80 1.00 0.00 1.00	
Final Sat: 1805 3800 0 1900 2872 814 1805 0 1615 0 0 0		Final Sat: 1805 3613 149 1805 2976 710 224 0 886 760 0 1615		Final Sat: 1805 3613 149 1805 2976 710 224 0 886 760 0 1615	
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat: 0.00 0.26 0.00 0.00 0.12 0.12 0.09 0.00 0.03 0.00 0.00 0.00		Vol/Sat: 0.17 0.20 0.20 0.06 0.10 0.10 0.44 0.00 0.44 0.12 0.00 0.18		Vol/Sat: 0.17 0.20 0.20 0.06 0.10 0.10 0.44 0.00 0.44 0.12 0.00 0.18	
Crit Moves: ****		Crit Moves: ****		Crit Moves: ****	
Green/Cycle: 0.24 0.62 0.00 0.00 0.48 0.48 0.20 0.00 0.20 0.00 0.00 0.00		Green/Cycle: 0.20 0.27 0.27 0.13 0.20 0.20 0.52 0.00 0.72 0.52 0.00 0.52		Green/Cycle: 0.20 0.27 0.27 0.13 0.20 0.20 0.52 0.00 0.72 0.52 0.00 0.52	
Volume/Cap: 0.01 0.42 0.00 0.00 0.24 0.24 0.44 0.00 0.15 0.00 0.00 0.00		Volume/Cap: 0.84 0.74 0.74 0.44 0.49 0.49 0.84 0.00 0.61 0.23 0.00 0.34		Volume/Cap: 0.84 0.74 0.74 0.44 0.49 0.49 0.84 0.00 0.61 0.23 0.00 0.34	
Level of Service Module:		Level of Service Module:		Level of Service Module:	
Delay/Veh: 18.7 6.4 0.0 0.0 9.9 9.9 23.2 0.0 21.4 0.0 0.0 0.0		Delay/Veh: 35.7 23.7 23.7 26.7 23.3 23.3 20.3 0.0 5.5 8.4 0.0 9.1		Delay/Veh: 35.7 23.7 23.7 26.7 23.3 23.3 20.3 0.0 5.5 8.4 0.0 9.1	
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh: 18.7 6.4 0.0 0.0 9.9 9.9 23.2 0.0 21.4 0.0 0.0 0.0		AdjDel/Veh: 35.7 23.7 23.7 26.7 23.3 23.3 20.3 0.0 5.5 8.4 0.0 9.1		AdjDel/Veh: 35.7 23.7 23.7 26.7 23.3 23.3 20.3 0.0 5.5 8.4 0.0 9.1	
Queue: 0 14 0 0 5 2 4 0 1 0 0 0		Queue: 9 19 1 3 7 2 3 0 6 1 0 5		Queue: 9 19 1 3 7 2 3 0 6 1 0 5	

Table J.7-10 (Continued)

D-PM, CMD	Tue Nov 5, 1996 10:50:39	Page 8-1	D-PM, CMD	Tue Nov 5, 1996 10:50:39	Page 9-1
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour			FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour		
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)			Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)		
Intersection #5 Maritime St./ 7th St. Extension			Intersection #6 7th St./ 7th St. Extension		
Cycle (sec):	100	Critical Vol./Cap. (X):	100	Critical Vol./Cap. (X):	0.670
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	14.7
Optimal Cycle:	48	Level Of Service:	58	Level Of Service:	B
Approach: North Bound South Bound East Bound West Bound			Approach: North Bound South Bound East Bound West Bound		
Movement: L - T - R L - T - R L - T - R L - T - R L - T - R			Movement: L - T - R L - T - R L - T - R L - T - R L - T - R		
Control:	Protected	Protected	Protected	Protected	Protected
Rights:	Include	Ovl	Include	Include	Ovl
Min. Green:	10 20 0 0 0 20 20 10 0 20 0 0 0		0 0 0 0 0 10 0 20 10 20 20 0 20 20		
Lanes:	2 0 2 0 0 0 0 2 0 1 2 0 0 1 0 0 0 0		0 0 0 0 0 2 0 0 1 2 0 2 0 0 0 0 1 1		
Volume Module:			Volume Module:		
Base Vol:	36 0 0 0 0 75 223 0 74 0 0 0		0 0 0 0 31 0 0 0 0 0 0 0		
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		
Initial Bse:	36 0 0 0 0 75 223 0 74 0 0 0		0 0 0 0 31 0 0 0 0 0 0 0		
Added Vol:	768 327 0 0 304 226 229 0 823 0 0 0		0 0 0 0 674 0 453 606 423 0 0 281 489		
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0		
Initial Fut:	804 327 0 0 304 301 452 0 897 0 0 0		0 0 0 0 705 0 453 606 423 0 0 281 489		
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		
PHF Volume:	804 327 0 0 304 301 452 0 897 0 0 0		0 0 0 0 705 0 453 606 423 0 0 281 489		
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0		
Reduced Vol:	804 327 0 0 304 301 452 0 897 0 0 0		0 0 0 0 705 0 453 606 423 0 0 281 489		
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		
MLF Adj:	1.03 1.05 1.00 1.00 1.05 1.00 1.03 1.00 1.00 1.00 1.00 1.00		1.00 1.00 1.00 1.00 1.03 1.00 1.00 1.03 1.05 1.00 1.00 1.10		
Final Vol:	828 343 0 0 319 301 466 0 897 0 0 0		0 0 0 0 726 0 453 624 444 0 0 310 537		
Saturation Flow Module:			Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900		1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900		
Adjustment:	0.95 1.00 1.00 1.00 0.85 0.95 1.00 0.85 1.00 1.00 1.00 0.91		0.95 1.00 1.00 0.85 0.95 1.00 0.85 0.95 1.00 1.00 1.00 0.91		
Lanes:	2.00 2.00 0.00 0.00 2.00 1.00 2.00 0.00 1.00 0.00 0.00 0.00		0.00 0.00 1.00 2.00 0.00 1.00 2.00 2.00 0.00 0.00 0.00 1.90		
Final Sat:	3610 3800 0 0 3800 1615 3610 0 1615 0 0		0 0 0 3610 0 1615 3610 3800 0 0 1898 3289		
Capacity Analysis Module:			Capacity Analysis Module:		
Vol/Sat:	0.23 0.09 0.00 0.00 0.08 0.19 0.13 0.00 0.56 0.00 0.00 0.00		0.00 0.00 0.00 0.20 0.00 0.28 0.17 0.12 0.00 0.00 0.16		
Crit Moves:	0.30 0.50 0.00 0.00 0.20 0.62 0.42 0.00 0.72 0.00 0.00 0.00		0.42 0.00 0.42 0.00 0.42 0.26 0.50 0.00 0.00 0.24 0.66		
Green/Cycle:	0.30 0.50 0.00 0.00 0.20 0.62 0.42 0.00 0.72 0.00 0.00 0.00		0.42 0.00 0.42 0.00 0.42 0.26 0.50 0.00 0.00 0.24 0.66		
Volume/Cap:	0.77 0.18 0.00 0.00 0.42 0.30 0.31 0.00 0.77 0.00 0.00 0.00		0.48 0.00 0.48 0.00 0.48 0.26 0.50 0.00 0.00 0.24 0.66		
Level Of Service Module:			Level Of Service Module:		
Delay/Veh:	23.2 9.0 0.0 0.0 22.8 5.7 12.4 0.0 8.0 0.0 0.0 0.0		0.0 0.0 13.9 0.0 17.0 22.8 9.1 0.0 0.0 23.1 4.4		
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		
AdjDel/Veh:	23.2 9.0 0.0 0.0 22.8 5.7 12.4 0.0 8.0 0.0 0.0 0.0		0.0 0.0 13.9 0.0 17.0 22.8 9.1 0.0 0.0 23.1 4.4		
Queue:	22 5 0 0 8 4 9 0 17 0 0 0		0 0 0 15 0 11 16 7 0 0 8 6		

Table J.7-10 (Continued)

D-PM.CMD		Tue Nov 5, 1996 10:50:39		Page 10-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 11-1	
Reduced Harbor Fill Alternative		Reduced Harbor Fill Alternative		PM Peak Hour	
Level of Service Computation Report		Level of Service Computation Report		Level of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #8 Adeline St./ 3rd St.		Intersection #9 7th/Middle Harbor Rd		Intersection #9 7th/Middle Harbor Rd	
Cycle (sec):	100	Cycle (sec):	100	Cycle (sec):	100
Loss Time (sec):	12 (Y+R = 4 sec)	Loss Time (sec):	8 (Y+R = 4 sec)	Loss Time (sec):	8 (Y+R = 4 sec)
Optimal Cycle:	92	Optimal Cycle:	58	Optimal Cycle:	58
Level of Service:	F	Level of Service:	C	Level of Service:	C
Approach:	North Bound	Approach:	North Bound	Approach:	North Bound
Movement:	L - T - R	Movement:	L - T - R	Movement:	L - T - R
Control:	Split Phase	Control:	Split Phase	Control:	Split Phase
Rights:	Include	Rights:	Include	Rights:	Include
Min. Green:	10 20 20	Min. Green:	10 0 20	Min. Green:	10 0 20
Lanes:	0 1 0 1 0 0 1 0 1 0 0 1 0 1 0	Lanes:	1 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0	Lanes:	1 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0
Volume Module:		Volume Module:		Volume Module:	
Base Vol:	36 0 122 43 0 15 30 14 13 89 39 78	Base Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Base Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:	36 0 122 43 0 15 30 14 13 89 39 78	Initial Bse:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Initial Bse:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Added Vol:	0 979 0 0 640 0 0 0 0 0 0 0 0 0 0	Added Vol:	4 0 383 0 0 0 0 0 0 0 0 0 0 0 0 0	Added Vol:	4 0 383 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PasserByVol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut:	36 979 122 43 640 15 30 14 13 89 39 78	Initial Fut:	4 0 383 0 0 0 0 0 0 0 0 0 0 0 0 0	Initial Fut:	4 0 383 0 0 0 0 0 0 0 0 0 0 0 0 0
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:	36 979 122 43 640 15 30 14 13 89 39 78	PHF Volume:	4 0 383 0 0 0 0 0 0 0 0 0 0 0 0 0	PHF Volume:	4 0 383 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduc Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Reduc Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Reduc Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol:	36 979 122 43 640 15 30 14 13 89 39 78	Reduced Vol:	4 0 383 0 0 0 0 0 0 0 0 0 0 0 0 0	Reduced Vol:	4 0 383 0 0 0 0 0 0 0 0 0 0 0 0 0
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:	1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05	MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol:	38 1028 128 45 672 16 30 14 13 89 39 78	Final Vol:	4 0 383 0 0 0 0 0 0 0 0 0 0 0 0 0	Final Vol:	4 0 383 0 0 0 0 0 0 0 0 0 0 0 0 0
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:	0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98 0.98	Adjustment:	0.95 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Adjustment:	0.95 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:	0.06 1.73 0.21 0.12 1.84 0.04 1.00 0.52 0.48 0.84 0.39 0.77	Lanes:	1.00 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Lanes:	1.00 0.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Final Sat:	119 3206 399 233 3484 83 1805 916 851 1512 663 1325	Final Sat:	1805 0 1615 0 0 0 0 0 0 0 0 0 0 0 0 0	Final Sat:	1805 0 1615 0 0 0 0 0 0 0 0 0 0 0 0 0
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:	0.32 0.32 0.32 0.19 0.19 0.19 0.02 0.02 0.02 0.06 0.06 0.06 0.06 0.06 0.06	Vol/Sat:	0.00 0.00 0.24 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Vol/Sat:	0.00 0.00 0.24 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Crit Moves:	0.28 0.28 0.28 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.20	Crit Moves:	0.38 0.00 0.38 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Crit Moves:	0.38 0.00 0.38 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Green/Cycle:	1.15 1.15 1.15 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96	Green/Cycle:	0.01 0.00 0.63 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Green/Cycle:	0.01 0.00 0.63 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Volume/Cap:	100.7 101 100.7 43.5 43.5 43.5 21.0 21.0 21.0 22.0 22.0 22.0 22.0 22.0 22.0	Volume/Cap:	12.6 0.0 18.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Volume/Cap:	12.6 0.0 18.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Level of Service Module:		Level of Service Module:		Level of Service Module:	
Delay/Veh:	100.7 101 100.7 43.5 43.5 43.5 21.0 21.0 21.0 22.0 22.0 22.0 22.0 22.0 22.0	Delay/Veh:	12.6 0.0 18.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Delay/Veh:	12.6 0.0 18.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:	100.7 101 100.7 43.5 43.5 43.5 21.0 21.0 21.0 22.0 22.0 22.0 22.0 22.0 22.0	AdjDel/Veh:	12.6 0.0 18.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	AdjDel/Veh:	12.6 0.0 18.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Queue:	4 56 9 3 23 1 1 0 0 2 1 2	Queue:	0 0 9 0 0 0 0 0 0 0 0 0 0 0 0	Queue:	0 0 9 0 0 0 0 0 0 0 0 0 0 0 0

Table J.7-10 (Continued)

[illegible]

Table J.7-10 (Continued)

D-PM.CMD	Tue Nov 5, 1996 10:50:39														Page 16-1													
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour														FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour														
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)														Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)														
Intersection #15 7th St./ I-880 NB Ramps / Frontage Rd.														Intersection #16 7th St./ I-880 SB Ramps														
Cycle (sec):		100		Critical Vol./Cap. (X):		0.426		Cycle (sec):		100		Critical Vol./Cap. (X):		0.550														
Loss Time (sec):		10 (Y+R = 4 sec)		Average Delay (sec/veh):		18.7		Loss Time (sec):		5 (Y+R = 4 sec)		Average Delay (sec/veh):		5.6														
Optimal Cycle:		70		Level Of Service:		C		Optimal Cycle:		35		Level Of Service:		B														
Approach: North Bound South Bound East Bound West Bound														Approach: North Bound South Bound East Bound West Bound														
Movement: L - T - R L - T - R L - T - R L - T - R														Movement: L - T - R L - T - R L - T - R L - T - R														
Control:		Protected		Protected		Protected		Control:		Protected		Protected		Protected														
Rights:		Include		Include		Include		Rights:		Include		Include		Include														
Min. Green:		10 20 20 10 20 20 10 20 20 0 20 20						Min. Green:		0 0 0 0 0 0 0 0 0 0 20 20 20 20																		
Lanes:		2 0 0 1 0 1 0 0 0 2 1 0 2 0 0 0 1 1 0						Lanes:		0 0 0 0 0 0 0 0 0 0 0 2 0 1 2 0 2 0 0																		
Volume Module:														Volume Module:														
Base Vol:		0 197 3 2 0 205 0 108 0 108 0 0 53 1						Base Vol:		0 0 0 0 0 0 0 0 0 0 0 0 7 378 0 0																		
Growth Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00						Growth Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00																		
Initial Bse:		0 197 3 2 0 205 0 108 0 108 0 0 53 1						Initial Bse:		0 0 0 0 0 0 0 0 0 0 0 0 7 378 0 0																		
Added Vol:		478 0 0 0 288 417 17 0 0 0 5 0						Added Vol:		0 0 0 0 0 0 0 0 0 0 434 663 0 770 0 0																		
PasserByVol:		0 0 0 0 0 0 0 0 0 0 0 0 0 0						PasserByVol:		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																		
Initial Fut:		478 197 3 2 0 493 417 125 0 0 58 1						Initial Fut:		0 0 0 0 0 0 0 0 0 0 434 670 378 770 0																		
User Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00						User Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00																		
PHF Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00						PHF Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00																		
PHF Volume:		478 197 3 2 0 493 417 125 0 0 58 1						PHF Volume:		0 0 0 0 0 0 0 0 0 0 434 670 378 770 0																		
Reduced Vol:		0 0 0 0 0 0 0 0 0 0 0 0 0 0						Reduced Vol:		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																		
Reduced Vol:		478 197 3 2 0 493 417 125 0 0 58 1						Reduced Vol:		0 0 0 0 0 0 0 0 0 0 434 670 378 770 0																		
PCE Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00						PCE Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00																		
MLF Adj:		1.03 1.00 1.00 1.00 1.00 1.00 1.13 1.00 1.05 1.00 1.00 1.05 1.05 1.05						MLF Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.05 1.03 1.05 1.00																		
Final Vol:		492 197 3 2 0 557 417 131 0 0 61 1						Final Vol:		0 0 0 0 0 0 0 0 0 0 456 670 389 808 0																		
Saturation Flow Module:														Saturation Flow Module:														
Sat/Lane:		1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900						Sat/Lane:		1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900																		
Adjustment:		0.95 1.00 1.00 0.85 1.00 0.85 0.95 1.00 1.00 1.00 1.00 1.00 1.00 1.00						Adjustment:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 0.95 1.00 1.00																		
Lanes:		2.00 0.98 0.02 1.00 0.00 2.00 1.00 2.00 0.00 0.00 1.97 0.03						Lanes:		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 2.00 2.00 0.00 0.00																		
Final Sat:		3610 1872 29 1805 0 3230 1805 3800 0 0 3739 61						Final Sat:		0 0 0 0 0 0 0 0 0 0 3800 1615 3610 3800 0																		
Capacity Analysis Module:														Capacity Analysis Module:														
Vol/Sat:		0.14 0.11 0.11 0.00 0.00 0.17 0.23 0.03 0.00 0.00 0.02 0.02						Vol/Sat:		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.41 0.11 0.21																		
Crit Moves:		0.19 0.26 0.26 0.13 0.00 0.51 0.31 0.51 0.00 0.00 0.20 0.20						Crit Moves:		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.75 0.75 0.20 0.95																		
Green/Cycle:		0.73 0.41 0.41 0.01 0.00 0.34 0.73 0.07 0.00 0.00 0.08 0.08						Green/Cycle:		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.16 0.55 0.55 0.22																		
Volume/Cap:		0.73 0.41 0.41 0.01 0.00 0.34 0.73 0.07 0.00 0.00 0.08 0.08						Volume/Cap:		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.16 0.55 0.55 0.22																		
Level Of Service Module:														Level Of Service Module:														
Delay/Veh:		27.7 20.3 20.3 24.6 0.0 9.2 23.1 7.9 0.0 0.0 21.0 21.0						Delay/Veh:		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.2 3.8 24.1 0.1																		
User DelAdj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00						User DelAdj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00																		
AdjDel/Veh:		27.7 20.3 20.3 24.6 0.0 9.2 23.1 7.9 0.0 0.0 21.0 21.0						AdjDel/Veh:		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.2 3.8 24.1 0.1																		
Queue:		14 5 0 0 0 9 11 2 0 0 1 0						Queue:		0 0 0 0 0 0 0 0 0 0 4 8 10 1																		

D-PM.CMD	Tue Nov 5, 1996 10:50:39														Page 17-1													
FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour														FISCO/Port Vision 2000 EIS/EIR Reduced Harbor Fill Alternative PM Peak Hour														
Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)														Level Of Service Computation Report 1994 HCM Operations Method (Future Volume Alternative)														
Intersection #16 7th St./ I-880 SB Ramps														Intersection #16 7th St./ I-880 SB Ramps														
Cycle (sec):		100		Critical Vol./Cap. (X):		0.550		Cycle (sec):		100		Critical Vol./Cap. (X):		0.550														
Loss Time (sec):		5 (Y+R = 4 sec)		Average Delay (sec/veh):		5.6		Loss Time (sec):		5 (Y+R = 4 sec)		Average Delay (sec/veh):		5.6														
Optimal Cycle:		35		Level Of Service:		B		Optimal Cycle:		35		Level Of Service:		B														
Approach: North Bound South Bound East Bound West Bound														Approach: North Bound South Bound East Bound West Bound														
Movement: L - T - R L - T - R L - T - R L - T - R														Movement: L - T - R L - T - R L - T - R L - T - R														
Control:		Protected		Protected		Protected		Control:		Protected		Protected		Protected														
Rights:		Include		Include		Include		Rights:		Include		Include		Include														
Min. Green:		0 0 0 0 0 0 0 0 0 0 20 20 20 20						Min. Green:		0 0 0 0 0 0 0 0 0 0 20 20 20 20																		
Lanes:		0 0 0 0 0 0 0 0 0 0 2 0 2 0 0 0						Lanes:		0 0 0 0 0 0 0 0 0 0 2 0 2 0 0 0																		
Volume Module:														Volume Module:														
Base Vol:		0 0 0 0 0 0 0 0 0 0 0 0 7 378 0 0						Base Vol:		0 0 0 0 0 0 0 0 0 0 0 0 7 378 0 0																		
Growth Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00						Growth Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00																		
Initial Bse:		0 0 0 0 0 0 0 0 0 0 0 0 7 378 0 0						Initial Bse:		0 0 0 0 0 0 0 0 0 0 0 0 7 378 0 0																		
Added Vol:		0 0 0 0 0 0 0 0 0 0 434 663 0 770 0 0						Added Vol:		0 0 0 0 0 0 0 0 0 0 434 663 0 770 0 0																		
PasserByVol:		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						PasserByVol:		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																		
Initial Fut:		0 0 0 0 0 0 0 0 0 0 434 670 378 770 0						Initial Fut:		0 0 0 0 0 0 0 0 434 670 378 770 0																		
User Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00						User Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00																		
PHF Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00						PHF Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00																		
PHF Volume:		0 0 0 0 0 0 0 0 0 0 434 670 378 770 0						PHF Volume:		0 0 0 0 0 0 0 0 434 670 378 770 0																		
Reduced Vol:		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						Reduced Vol:		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																		
Reduced Vol:		0 0 0 0 0 0 0 0 0 0 434 670 378 770 0						Reduced Vol:		0 0 0 0 0 0 0 0 434 670 378 770 0																		
PCE Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00						PCE Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00																		
MLF Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.05 1.03 1.05						MLF Adj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.05 1.03 1.05																		
Final Vol:		0 0 0 0 0 0 0 0 0 0 456 670 389 808 0						Final Vol:		0 0 0 0 0 0 0 0 456 670 389 808 0																		
Saturation Flow Module:														Saturation Flow Module:														
Sat/Lane:		1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900						Sat/Lane:		1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900																		
Adjustment:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 0.95 1.00						Adjustment:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 0.95 1.00																		
Lanes:		2.00 0.98 0.02 1.00 0.00 2.00 1.00 2.00 0.00 0.00 1.97 0.03						Lanes:		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 2.00 2.00 0.00 0.00																		
Final Sat:		3610 1872 29 1805 0 3230 1805 3800 0 0 3739 61						Final Sat:		0 0 0 0 0 0 0 0 3800 1615 3610 3800 0																		
Capacity Analysis Module:														Capacity Analysis Module:														
Vol/Sat:		0.14 0.11 0.11 0.00 0.00 0.17 0.23 0.03 0.00 0.00 0.02 0.02						Vol/Sat:		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.12 0.41 0.11 0.21																		
Crit Moves:		0.19 0.26 0.26 0.13 0.00 0.51 0.31 0.51 0.00 0.00 0.20 0.20						Crit Moves:		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.75 0.75 0.20 0.95																		
Green/Cycle:		0.73 0.41 0.41 0.01 0.00 0.34 0.73 0.07 0.00 0.00 0.08 0.08						Green/Cycle:		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.16 0.55 0.55 0.22																		
Volume/Cap:		0.73 0.41 0.41 0.01 0.00 0.34 0.73 0.07 0.00 0.00 0.08 0.08						Volume/Cap:		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.16 0.55 0.55 0.22																		
Level Of Service Module:														Level Of Service Module:														
Delay/Veh:		27.7 20.3 20.3 24.6 0.0 9.2 23.1 7.9 0.0 0.0 21.0 21.0						Delay/Veh:		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.2 3.8 24.1 0.1																		
User DelAdj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00						User DelAdj:		1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00																		
AdjDel/Veh:		27.7 20.3 20.3 24.6 0.0 9.2 23.1 7.9 0.0 0.0 21.0 21.0						AdjDel/Veh:		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 2.2 3.8 24.1 0.1																		
Queue:		14 5 0 0 0 9 11 2 0 0 1 0						Queue:		0 0 0 0 0 0 0 0 4 8 10 1																		

Table J.7-10 (Continued)

D-PM.CMD		Tue Nov 5, 1996 10:50:39		Page 18-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 19-1	
Reduced Harbor Fill Alternative		Reduced Harbor Fill Alternative		PM Peak Hour	
Level of Service Computation Report		Level of Service Computation Report		PM Peak Hour	
1994 HCM Operational Method (Future Volume Alternative)		1994 HCM Operational Method (Future Volume Alternative)		PM Peak Hour	
Intersection #17 14th St./ I-880 Frontage Rd.		Intersection #18 W.Grand Ave./ I-880 Frontage Rd.		PM Peak Hour	
Average Delay (sec/veh):		Average Delay (sec/veh):		Average Delay (sec/veh):	
Approach:		Approach:		Approach:	
Movement:		Movement:		Movement:	
Control:		Control:		Control:	
Rights:		Rights:		Rights:	
Lanes:		Lanes:		Lanes:	
Volume Module:		Volume Module:		Volume Module:	
Base Vol:		Base Vol:		Base Vol:	
Growth Adj:		Growth Adj:		Growth Adj:	
Initial Bse:		Initial Bse:		Initial Bse:	
Added Vol:		Added Vol:		Added Vol:	
PasserByVol:		PasserByVol:		PasserByVol:	
Initial Fut:		Initial Fut:		Initial Fut:	
User Adj:		User Adj:		User Adj:	
PHF Adj:		PHF Adj:		PHF Adj:	
PHF Volume:		PHF Volume:		PHF Volume:	
Reduced Vol:		Reduced Vol:		Reduced Vol:	
Final Vol:		Final Vol:		Final Vol:	
Adjusted Volume Module:		Adjusted Volume Module:		Adjusted Volume Module:	
Grade:		Grade:		Grade:	
Cycle/Cars:		Cycle/Cars:		Cycle/Cars:	
Truck/Comb:		Truck/Comb:		Truck/Comb:	
PCE Adj:		PCE Adj:		PCE Adj:	
Cycl/Car PCE:		Cycl/Car PCE:		Cycl/Car PCE:	
Truck/Cmb PCE:		Truck/Cmb PCE:		Truck/Cmb PCE:	
Adj Vol:		Adj Vol:		Adj Vol:	
Critical Gap Module:		Critical Gap Module:		Critical Gap Module:	
MoveUp Time:		MoveUp Time:		MoveUp Time:	
Critical Gp:		Critical Gp:		Critical Gp:	
Capacity Module:		Capacity Module:		Capacity Module:	
Conflict Vol:		Conflict Vol:		Conflict Vol:	
Portent Cap:		Portent Cap:		Portent Cap:	
Adj Cap:		Adj Cap:		Adj Cap:	
Move Cap:		Move Cap:		Move Cap:	
Level of Service Module:		Level of Service Module:		Level of Service Module:	
Stopped Del:		Stopped Del:		Stopped Del:	
LOS by Move:		LOS by Move:		LOS by Move:	
Movement:		Movement:		Movement:	
Shared Cap:		Shared Cap:		Shared Cap:	
Shrd SpdDel:		Shrd SpdDel:		Shrd SpdDel:	
Shared LOS:		Shared LOS:		Shared LOS:	
ApproachDel:		ApproachDel:		ApproachDel:	

Table J.7-11

A-AM-MIT.CMD		Tue Nov 5, 1996 13:36:24		Page 1-1	
A-PM-MIT.CMD		Tue Nov 5, 1996 13:37:22		Page 1-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR			
Maximum Marine/Maximum Rail Alternative - Mitigated		Maximum Marine/Maximum Rail Alternative - Mitigated			
AM Peak Hour		PM Peak Hour			
Level Of Service Computation Report		Level Of Service Computation Report			
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)			
Intersection #8 Adeline St./ 3rd St.		Intersection #8 Adeline St./ 3rd St.			
Cycle (sec):	100	Critical Vol./Cap. (X):	0.675		
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):	28.9		
Optimal Cycle:	82	Level Of Service:	D		
Approach:	North Bound	South Bound	East Bound	West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Split Phase	Split Phase	Split Phase	Split Phase	
Rights:	Include	Include	Include	Include	
Min. Green:	10 20 20	10 20 20	10 20 20	10 20 20	
Lanes:	0 1 0 1 0 0	0 1 0 1 0 0	0 1 0 1 0 0	0 1 0 1 0 0	
Volume Module:					
Base Vol:	8 0 31 26 0 26	8 6 29 50 59 56			
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00			
Initial Bse:	8 0 31 26 0 26	8 6 29 50 59 56			
Added Vol:	0 778 0 0 1020 0	0 0 0 0 0 0			
PasserByVol:	0 0 0 0 0 0	0 0 0 0 0 0			
Initial Fut:	8 778 31 26 1020 26	8 6 29 50 59 56			
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00			
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00			
PHF Volume:	8 778 31 26 1020 26	8 6 29 50 59 56			
Reduct Vol:	0 0 0 0 0 0	0 0 0 0 0 0			
Reduced Vol:	8 778 31 26 1020 26	8 6 29 50 59 56			
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00			
MLF Adj:	1.05 1.05 1.05 1.05 1.05 1.05	1.00 1.00 1.00 1.00 1.00 1.00			
Final Vol:	8 817 33 27 1071 27	8 6 29 50 59 56			
Saturation Flow Module:					
Sat/Lane:	1900 1900 1900 1900 1900 1900	1900 1900 1900 1900 1900 1900			
Adjustment:	0.99 0.99 0.99 1.00 1.00 1.00	0.95 0.88 0.88 0.95 0.93 0.93			
Lanes:	0.02 1.90 0.08 0.05 1.90 0.05	1.00 0.17 0.83 1.00 0.51 0.49			
Final Sat.:	35 3582 145 91 3618 91	1805 287 1385 1805 907 860			
Capacity Analysis Module:					
Vol/Sat:	0.23 0.23 0.23 0.30 0.30 0.30	0.00 0.02 0.02 0.03 0.07 0.07			
Crit Moves:	****	****			
Green/Cycle:	0.25 0.25 0.25 0.33 0.33 0.33	0.10 0.20 0.20 0.10 0.20 0.20			
Volume/Cap:	0.90 0.90 0.90 0.90 0.90 0.90	0.04 0.10 0.10 0.28 0.33 0.33			
Level Of Service Module:					
Delay/Veh:	31.9 31.9 31.9 27.6 27.6 27.6	26.3 21.1 21.1 27.1 22.3 22.3			
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00			
AdjDel/Veh:	31.9 31.9 31.9 27.6 27.6 27.6	26.3 21.1 21.1 27.1 22.3 22.3			
Queue:	1 25 2 2 31 2	0 0 0 1 1 1			

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Table J.7-11 (Continued)

B-AM-MIT.CMD		Tue Nov 5, 1996 13:37:48		B-PM-MIT.CMD		Tue Nov 5, 1996 13:38:17		Page 1-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Page 1-1	
Minimum Marine/Minimum Rail Alternative - Mitigated		Minimum Marine/Minimum Rail Alternative - Mitigated		Minimum Marine/Minimum Rail Alternative - Mitigated		Minimum Marine/Minimum Rail Alternative - Mitigated		Page 1-1	
AM Peak Hour		PM Peak Hour		PM Peak Hour		PM Peak Hour		Page 1-1	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report		Page 1-1	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		Page 1-1	
Intersection #8 Adeline St./ 3rd St.		Intersection #8 Adeline St./ 3rd St.		Intersection #8 Adeline St./ 3rd St.		Intersection #8 Adeline St./ 3rd St.		Page 1-1	
Cycle (sec): 100		Cycle (sec): 100		Cycle (sec): 100		Cycle (sec): 100		Page 1-1	
Loss Time (sec): 12 (Y+R = 4 sec)		Loss Time (sec): 12 (Y+R = 4 sec)		Loss Time (sec): 12 (Y+R = 4 sec)		Loss Time (sec): 12 (Y+R = 4 sec)		Page 1-1	
Optimal Cycle: 82		Optimal Cycle: 82		Optimal Cycle: 82		Optimal Cycle: 82		Page 1-1	
Level Of Service: D		Level Of Service: D		Level Of Service: D		Level Of Service: D		Page 1-1	
Approach: North Bound		Approach: North Bound		Approach: North Bound		Approach: North Bound		Page 1-1	
Movement: L - T - R		Movement: L - T - R		Movement: L - T - R		Movement: L - T - R		Page 1-1	
Control: Split Phase		Control: Split Phase		Control: Split Phase		Control: Split Phase		Page 1-1	
Rights: Include		Rights: Include		Rights: Include		Rights: Include		Page 1-1	
Min. Green: 10 20 20		Min. Green: 10 20 20		Min. Green: 10 20 20		Min. Green: 10 20 20		Page 1-1	
Lanes: 0 1 0 1 0		Lanes: 0 1 0 1 0		Lanes: 0 1 0 1 0		Lanes: 0 1 0 1 0		Page 1-1	
Volume Module:		Volume Module:		Volume Module:		Volume Module:		Page 1-1	
Base Vol:		Base Vol:		Base Vol:		Base Vol:		Page 1-1	
Growth Adj:		Growth Adj:		Growth Adj:		Growth Adj:		Page 1-1	
Initial Bse:		Initial Bse:		Initial Bse:		Initial Bse:		Page 1-1	
Added Vol:		Added Vol:		Added Vol:		Added Vol:		Page 1-1	
PasserByVol:		PasserByVol:		PasserByVol:		PasserByVol:		Page 1-1	
Initial Fut:		Initial Fut:		Initial Fut:		Initial Fut:		Page 1-1	
User Adj:		User Adj:		User Adj:		User Adj:		Page 1-1	
PHF Adj:		PHF Adj:		PHF Adj:		PHF Adj:		Page 1-1	
PHF Volume:		PHF Volume:		PHF Volume:		PHF Volume:		Page 1-1	
Reduced Vol:		Reduced Vol:		Reduced Vol:		Reduced Vol:		Page 1-1	
PCE Adj:		PCE Adj:		PCE Adj:		PCE Adj:		Page 1-1	
MLF Adj:		MLF Adj:		MLF Adj:		MLF Adj:		Page 1-1	
Final Vol:		Final Vol:		Final Vol:		Final Vol:		Page 1-1	
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:		Page 1-1	
Sat/Lane:		Sat/Lane:		Sat/Lane:		Sat/Lane:		Page 1-1	
Adjustment:		Adjustment:		Adjustment:		Adjustment:		Page 1-1	
Lanes:		Lanes:		Lanes:		Lanes:		Page 1-1	
Final Sat:		Final Sat:		Final Sat:		Final Sat:		Page 1-1	
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:		Page 1-1	
Vol/Sat:		Vol/Sat:		Vol/Sat:		Vol/Sat:		Page 1-1	
Crit Moves:		Crit Moves:		Crit Moves:		Crit Moves:		Page 1-1	
Green/Cycle:		Green/Cycle:		Green/Cycle:		Green/Cycle:		Page 1-1	
Volume/Cap:		Volume/Cap:		Volume/Cap:		Volume/Cap:		Page 1-1	
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:		Level Of Service Module:		Page 1-1	
Delay/Veh:		Delay/Veh:		Delay/Veh:		Delay/Veh:		Page 1-1	
User DelAdj:		User DelAdj:		User DelAdj:		User DelAdj:		Page 1-1	
AdjDel/Veh:		AdjDel/Veh:		AdjDel/Veh:		AdjDel/Veh:		Page 1-1	
Queue:		Queue:		Queue:		Queue:		Page 1-1	

Table J.7-11 (Continued)

C-AM-MIT.CMD Tue Nov 5, 1996 14:05:58 Page 1-1

FISCO/Port Vision 2000 EIS/EIR
Maximum Marine/Minimum Rail Alternative - Mitigated
AM Peak Hour

Level Of Service Computation Report															
1994 HCM Operations Method (Future Volume Alternative)															
Intersection #8 Adeline St./ 3rd St.															
Cycle (sec):	100	Critical Vol./Cap. (X):										0.720			
Loss Time (sec):	12 (Y+R = 4 sec)	Average Delay (sec/veh):										36.6			
Optimal Cycle:	82	Level Of Service:										D			
Approach: North Bound South Bound East Bound West Bound															
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Split Phase			Split Phase			Split Phase			Split Phase			Protected		
Rights:	Include			Include			Include			Include			Protected		
Min. Green:	10	20	20	10	20	20	10	20	20	10	20	20	10	20	20
Lanes:	0	1	0	1	0	0	1	0	1	0	1	0	1	0	1
Volume Module:															
Base Vol:	8	0	31	26	0	26	8	6	29	50	59	56			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	0	31	26	0	26	8	6	29	50	59	56			
Added Vol:	0	828	0	0	1113	0	0	0	0	0	0	0			
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	8	828	31	26	1113	26	8	6	29	50	59	56			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	8	828	31	26	1113	26	8	6	29	50	59	56			
Reduc Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	8	828	31	26	1113	26	8	6	29	50	59	56			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol:	8	870	33	27	1169	27	8	6	29	50	59	56			
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.99	0.99	0.99	1.00	1.00	1.00	0.95	0.88	0.88	0.95	0.93	0.93	0.93	0.93	0.93
Lanes:	0.02	1.91	0.07	0.04	1.92	0.04	1.00	0.17	0.83	1.00	0.51	0.49	0.49	0.49	0.49
Final Sat:	33	3593	136	84	3632	84	1805	287	1385	1805	907	860	860	860	860
Capacity Analysis Module:															
Vol/Sat:	0.24	0.24	0.24	0.32	0.32	0.32	0.00	0.02	0.02	0.03	0.07	0.07	0.07	0.07	0.07
Crit Moves:	0.25	0.25	0.25	0.33	0.33	0.33	0.10	0.20	0.20	0.10	0.20	0.20	0.20	0.20	0.20
Green/Cycle:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Volume/Cap:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Level Of Service Module:															
Delay/Veh:	41.1	41.1	41.1	35.6	35.6	35.6	26.3	21.1	21.1	27.1	22.3	22.3	22.3	22.3	22.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.1	41.1	41.1	35.6	35.6	35.6	26.3	21.1	21.1	27.1	22.3	22.3	22.3	22.3	22.3
Queue:	1	30	2	2	38	2	0	0	1	1	1	1	1	1	1

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C-PM-MIT.CMD Tue Nov 5, 1996 14:05:26 Page 1-1

FISCO/Port Vision 2000 EIS/EIR
Maximum Marine/Minimum Rail Alternative - Mitigated
PM Peak Hour

Level Of Service Computation Report														
1994 HCM Operations Method (Future Volume Alternative)														
Intersection #8 Adeline St./ 3rd St.														
Cycle (sec):	100		Critical Vol./Cap. (X):		0.706									
Loss Time (sec):	12 (Y+R = 4 sec)		Average Delay (sec/veh):		30.2									
Optimal Cycle:	82		Level Of Service:		D									
Approach: North Bound South Bound East Bound West Bound														
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Split Phase		Split Phase		Split Phase		Split Phase		Split Phase		Split Phase		Split Phase	
Rights:	Include		Include		Include		Include		Include		Include		Include	
Min. Green:	10	20	20	10	20	20	10	20	20	10	20	20	10	20
Lanes:	0	1	0	0	1	0	1	0	1	0	1	0	1	0
Volume Module:														
Base Vol:	36	0	122	43	0	15	30	14	13	89	39	78		
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	0	122	43	0	15	30	14	13	89	39	78		
Added Vol:	0	1041	0	0	670	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	1041	122	43	670	15	30	14	13	89	39	78		
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	36	1041	122	43	670	15	30	14	13	89	39	78		
Reduced Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	1041	122	43	670	15	30	14	13	89	39	78		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.05	1.05	1.05	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol:	38	1093	128	45	704	16	30	14	13	89	39	78		
Saturation Flow Module:														
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.99	0.99	0.99	1.00	1.00	1.00	0.95	0.93	0.93	0.95	0.90	0.90	0.90	0.90
Lanes:	0.06	1.74	0.20	0.12	1.84	0.04	1.00	0.52	0.48	1.00	0.33	0.67	0.67	0.67
Final Sat:	114	3266	382	224	3497	79	1805	916	851	1805	570	1140	1140	1140
Capacity Analysis Module:														
Vol/Sat:	0.33	0.33	0.33	0.20	0.20	0.20	0.02	0.02	0.02	0.05	0.07	0.07	0.07	0.07
Crit Moves:	0.36	0.36	0.36	0.22	0.22	0.22	0.10	0.20	0.20	0.10	0.20	0.20	0.20	0.20
Green/Cycle:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Volume/Cap:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Level Of Service Module:														
Delay/Veh:	27.6	27.6	27.6	36.2	36.2	36.2	26.6	21.0	21.0	29.3	22.4	22.4	22.4	22.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.6	27.6	27.6	36.2	36.2	36.2	26.6	21.0	21.0	29.3	22.4	22.4	22.4	22.4
Queue:	2	33	5	2	23	1	1	0	0	2	1	1	1	1

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Table J.7-11 (Continued)

D-AM-MIT.CMD		Tue Nov 5, 1996 14:07:36		Page 1-1	
D-PM-MIT.CMD		Tue Nov 5, 1996 14:08:07		Page 1-1	
FISCO/Port Vision 2000 EIS/EIR		FISCO/Port Vision 2000 EIS/EIR		Reduced Harbor Fill Alternative - Mitigated	
Reduced Harbor Fill Alternative - Mitigated		Reduced Harbor Fill Alternative - Mitigated		PM Peak Hour	
Level Of Service Computation Report		Level Of Service Computation Report		Level Of Service Computation Report	
1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)		1994 HCM Operations Method (Future Volume Alternative)	
Intersection #8 Adeline St./ 3rd St.		Intersection #8 Adeline St./ 3rd St.		Intersection #8 Adeline St./ 3rd St.	
Cycle (sec): 100		Cycle (sec): 100		Cycle (sec): 100	
Loss Time (sec): 12 (Y+R = 4 sec)		Loss Time (sec): 12 (Y+R = 4 sec)		Loss Time (sec): 12 (Y+R = 4 sec)	
Optimal Cycle: 82		Optimal Cycle: 82		Optimal Cycle: 82	
Level Of Service: D		Level Of Service: D		Level Of Service: D	
Approach: North Bound		Approach: North Bound		Approach: North Bound	
Movement: L - T - R		Movement: L - T - R		Movement: L - T - R	
Control: Split Phase		Control: Split Phase		Control: Split Phase	
Rights: Include		Rights: Include		Rights: Include	
Min. Green: 10 20 20		Min. Green: 10 20 20		Min. Green: 10 20 20	
Lanes: 0 1 0 1 0 0 1 0 1 0 1 0 1 0 1 0		Lanes: 0 1 0 1 0 0 1 0 1 0 1 0 1 0 1 0		Lanes: 0 1 0 1 0 0 1 0 1 0 1 0 1 0 1 0	
Volume Module:		Volume Module:		Volume Module:	
Base Vol:		Base Vol:		Base Vol:	
Growth Adj:		Growth Adj:		Growth Adj:	
Initial Bse:		Initial Bse:		Initial Bse:	
Added Vol:		Added Vol:		Added Vol:	
PasserByVol:		PasserByVol:		PasserByVol:	
Initial Fut:		Initial Fut:		Initial Fut:	
User Adj:		User Adj:		User Adj:	
PHF Adj:		PHF Adj:		PHF Adj:	
PHF Volume:		PHF Volume:		PHF Volume:	
Reduced Vol:		Reduced Vol:		Reduced Vol:	
PCE Adj:		PCE Adj:		PCE Adj:	
MLF Adj:		MLF Adj:		MLF Adj:	
Final Vol:		Final Vol:		Final Vol:	
Saturation Flow Module:		Saturation Flow Module:		Saturation Flow Module:	
Sat/Lane:		Sat/Lane:		Sat/Lane:	
Adjustment:		Adjustment:		Adjustment:	
Lanes:		Lanes:		Lanes:	
Final Sat:		Final Sat:		Final Sat:	
Capacity Analysis Module:		Capacity Analysis Module:		Capacity Analysis Module:	
Vol/Sat:		Vol/Sat:		Vol/Sat:	
Crit Moves:		Crit Moves:		Crit Moves:	
Green/Cycle:		Green/Cycle:		Green/Cycle:	
Volume/Cap:		Volume/Cap:		Volume/Cap:	
Level Of Service Module:		Level Of Service Module:		Level Of Service Module:	
Delay/Veh:		Delay/Veh:		Delay/Veh:	
User DelAdj:		User DelAdj:		User DelAdj:	
AdjDel/Veh:		AdjDel/Veh:		AdjDel/Veh:	
Queue:		Queue:		Queue:	

Appendix J.8
Freeway LOS Calculations - AM and PM Peak Hour

Table J.8-1
Freeway Level of Service Calculations - AM Peak Hour

1. I-80 at the Bay Bridge

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	C	F	0.61	1.07	5	5	6,130	10,728	0	0
Maximum Marine/Maximum Rail	C	F	0.62	1.08	5	5	6,207	10,758	77	30
Minimum Marine/Minimum Rail	C	F	0.62	1.08	5	5	6,184	10,753	54	25
Maximum Marine/Minimum Rail	C	F	0.62	1.08	5	5	6,219	10,760	89	32
Reduced Harbor Fill	C	F	0.62	1.08	5	5	6,209	10,758	79	30

2. I-80 Between I-880 & I-580

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	B	F	0.44	1.08	3	3	2,665	6,492	0	0
Maximum Marine/Maximum Rail	B	F	0.44	1.08	3	3	2,654	6,487	-11	-5
Minimum Marine/Minimum Rail	B	F	0.45	1.08	3	3	2,675	6,509	10	17
Maximum Marine/Minimum Rail	B	F	0.44	1.08	3	3	2,646	6,477	-19	-15
Reduced Harbor Fill	B	F	0.44	1.08	3	3	2,652	6,485	-13	-7

3. I-80 East of I-80/I-580 Split

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB†	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	D	F	0.86	1.09	4	4	6,877	8,714	0	0
Maximum Marine/Maximum Rail	D	F	0.86	1.09	4	4	6,913	8,743	36	29
Minimum Marine/Minimum Rail	D	F	0.86	1.09	4	4	6,914	8,754	37	40
Maximum Marine/Minimum Rail	D	F	0.86	1.09	4	4	6,915	8,752	38	38
Reduced Harbor Fill	D	F	0.86	1.09	4	4	6,913	8,745	36	31

4. I-880 Connector to I-80 East

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	B	C	0.40	0.59	2	2	1,610	2,379	0	0
Maximum Marine/Maximum Rail	B	C	0.42	0.61	2	2	1,674	2,434	64	55
Minimum Marine/Minimum Rail	B	C	0.41	0.60	2	2	1,646	2,417	36	38
Maximum Marine/Minimum Rail	B	C	0.42	0.61	2	2	1,679	2,446	69	67
Reduced Harbor Fill	B	C	0.42	0.61	2	2	1,676	2,438	66	59

5. I-880 Connector to I-80 West

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	A	A	0.33	0.20	2	2	1,300	810	0	0
Maximum Marine/Maximum Rail	A	A	0.33	0.22	2	2	1,318	881	18	71
Minimum Marine/Minimum Rail	A	A	0.33	0.22	2	2	1,335	882	35	72
Maximum Marine/Minimum Rail	A	A	0.33	0.22	2	2	1,313	884	13	74
Reduced Harbor Fill	A	A	0.33	0.22	2	2	1,317	882	17	72

6. I-880 North of 7th St.

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	B	B	0.40	0.38	3	3	2,412	2,276	0	0
Maximum Marine/Maximum Rail	B	B	0.41	0.39	3	3	2,454	2,313	42	37
Minimum Marine/Minimum Rail	B	B	0.40	0.38	3	3	2,384	2,256	-28	-20
Maximum Marine/Minimum Rail	B	B	0.39	0.37	3	3	2,351	2,220	-61	-56
Reduced Harbor Fill	B	B	0.41	0.39	3	3	2,457	2,319	45	43

† Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-1 (Continued)
Freeway Level of Service Calculations - AM Peak Hour

7. I-880 South of 7th St.

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	C	B	0.64	0.42	3	3	3,844	2,509	0	0
Maximum Marine/Maximum Rail	C	B	0.67	0.44	3	3	4,030	2,665	186	156
Minimum Marine/Minimum Rail	C	B	0.66	0.43	3	3	3,931	2,584	87	75
Maximum Marine/Minimum Rail	C	B	0.63	0.41	3	3	3,793	2,436	-51	-73
Reduced Harbor Fill	C	B	0.67	0.44	3	3	4,022	2,661	178	152

8. I-880 North of I-980

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	C	A	0.63	0.33	3	3	3,757	1,981	0	0
Maximum Marine/Maximum Rail	C	A	0.65	0.35	3	3	3,900	2,096	143	115
Minimum Marine/Minimum Rail	C	A	0.65	0.35	3	3	3,872	2,089	115	108
Maximum Marine/Minimum Rail	C	A	0.63	0.35	3	3	3,768	2,100	11	119
Reduced Harbor Fill	C	A	0.65	0.35	3	3	3,890	2,095	133	114

9. I-880 South of I-980

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	E	C	0.93	0.66	4	4	7,447	5,258	0	0
Maximum Marine/Maximum Rail	E	C	0.95	0.67	4	4	7,598	5,373	151	115
Minimum Marine/Minimum Rail	E	C	0.95	0.67	4	4	7,585	5,366	138	108
Maximum Marine/Minimum Rail	E	C	0.95	0.67	4	4	7,621	5,377	174	119
Reduced Harbor Fill	E	C	0.95	0.67	4	4	7,603	5,372	156	114

10. I-880 North of I-238

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	D	1.14	0.90	4	4	9,080	7,168	0	0
Maximum Marine/Maximum Rail	F	D	1.15	0.91	4	4	9,231	7,283	151	115
Minimum Marine/Minimum Rail	F	D	1.15	0.91	4	4	9,218	7,276	138	108
Maximum Marine/Minimum Rail	F	D	1.16	0.91	4	4	9,254	7,287	174	119
Reduced Harbor Fill	F	D	1.15	0.91	4	4	9,236	7,282	156	114

11. I-880 South of I-238

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	F	1.17	1.27	4	4	9,395	10,136	0	0
Maximum Marine/Maximum Rail	F	F	1.19	1.28	4	4	9,512	10,211	117	75
Minimum Marine/Minimum Rail	F	F	1.19	1.28	4	4	9,494	10,205	99	69
Maximum Marine/Minimum Rail	F	F	1.19	1.28	4	4	9,528	10,214	133	78
Reduced Harbor Fill	F	F	1.19	1.28	4	4	9,516	10,211	121	75

12. I-238

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB†	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	B	F	0.53	1.01	3	3	3,163	6,089	0	0
Maximum Marine/Maximum Rail	B	F	0.53	1.02	3	3	3,203	6,123	40	34
Minimum Marine/Minimum Rail	B	F	0.53	1.02	3	3	3,202	6,128	39	39
Maximum Marine/Minimum Rail	B	F	0.53	1.02	3	3	3,204	6,130	41	41
Reduced Harbor Fill	B	F	0.53	1.02	3	3	3,202	6,125	39	36

† Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-1 (Continued)
Freeway Level of Service Calculations - AM Peak Hour

13. I-580 East of I-238

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	C	D	0.65	0.87	5	5	6,539	8,658	0	0
Maximum Marine/Maximum Rail	C	D	0.66	0.87	5	5	6,579	8,693	40	35
Minimum Marine/Minimum Rail	C	D	0.66	0.87	5	5	6,578	8,700	39	42
Maximum Marine/Minimum Rail	C	D	0.66	0.87	5	5	6,580	8,699	41	41
Reduced Harbor Fill	C	D	0.66	0.87	5	5	6,578	8,694	39	36

14. I-580 West of I-238

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Maximum Marine/Maximum Rail	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Minimum Marine/Minimum Rail	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Maximum Marine/Minimum Rail	D	E	0.93	0.95	4	4	7,418	7,630	0	0
Reduced Harbor Fill	D	E	0.93	0.95	4	4	7,418	7,630	0	0

15. I-580 East of I-980/SH 24

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	C	F	0.60	1.09	4	4	4,783	8,698	0	0
Maximum Marine/Maximum Rail	C	F	0.60	1.09	4	4	4,783	8,698	0	0
Minimum Marine/Minimum Rail	C	F	0.60	1.09	4	4	4,783	8,698	0	0
Maximum Marine/Minimum Rail	C	F	0.60	1.09	4	4	4,783	8,698	0	0
Reduced Harbor Fill	C	F	0.60	1.09	4	4	4,783	8,698	0	0

16. I-580 West of I-980/SH 24

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB†	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	C	E	0.67	0.98	5	5	6,665	9,843	0	0
Maximum Marine/Maximum Rail	C	E	0.67	0.99	5	5	6,681	9,864	16	21
Minimum Marine/Minimum Rail	C	E	0.67	0.99	5	5	6,675	9,858	10	15
Maximum Marine/Minimum Rail	C	E	0.67	0.99	5	5	6,676	9,857	11	14
Reduced Harbor Fill	C	E	0.67	0.99	5	5	6,681	9,864	16	21

17. I-980

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB†	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	B	D	0.43	0.83	4	4	3,403	6,619	0	0
Maximum Marine/Maximum Rail	B	D	0.42	0.82	4	4	3,391	6,599	-12	-20
Minimum Marine/Minimum Rail	B	D	0.42	0.83	4	4	3,398	6,612	-5	-7
Maximum Marine/Minimum Rail	B	D	0.42	0.83	4	4	3,397	6,609	-6	-10
Reduced Harbor Fill	B	D	0.42	0.83	4	4	3,391	6,600	-12	-19

18. SH 24 East of I-580

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB†	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	A	F	0.30	1.01	4	4	2,436	8,090	0	0
Maximum Marine/Maximum Rail	A	F	0.31	1.01	4	4	2,448	8,091	12	1
Minimum Marine/Minimum Rail	A	F	0.31	1.01	4	4	2,444	8,095	8	5
Maximum Marine/Minimum Rail	A	F	0.31	1.01	4	4	2,450	8,093	14	3
Reduced Harbor Fill	A	F	0.31	1.01	4	4	2,449	8,091	13	1

† Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-2
Freeway Level of Service Calculations - PM Peak Hour

1. I-80 at the Bay Bridge

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	C	1.18	0.73	5	5	11,845	7,305	0	0
Maximum Marine/Maximum Rail	F	C	1.19	0.74	5	5	11,873	7,375	28	70
Minimum Marine/Minimum Rail	F	C	1.19	0.74	5	5	11,868	7,355	23	50
Maximum Marine/Minimum Rail	F	C	1.19	0.74	5	5	11,876	7,386	31	81
Reduced Harbor Fill	F	C	1.19	0.74	5	5	11,873	7,377	28	72

2. I-80 Between I-880 & I-580

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	C	B	0.70	0.41	3	3	4,217	2,430	0	0
Maximum Marine/Maximum Rail	C	B	0.70	0.40	3	3	4,211	2,422	-6	-8
Minimum Marine/Minimum Rail	C	B	0.71	0.41	3	3	4,233	2,439	16	9
Maximum Marine/Minimum Rail	C	B	0.70	0.40	3	3	4,202	2,416	-15	-14
Reduced Harbor Fill	C	B	0.70	0.40	3	3	4,209	2,420	-8	-10

3. I-80 East of I-80/I-580 Split

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB†	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	F	1.20	1.02	4	4	9,614	8,123	0	0
Maximum Marine/Maximum Rail	F	F	1.21	1.02	4	4	9,650	8,151	36	28
Minimum Marine/Minimum Rail	F	F	1.21	1.02	4	4	9,656	8,153	42	30
Maximum Marine/Minimum Rail	F	F	1.21	1.02	4	4	9,658	8,153	44	30
Reduced Harbor Fill	F	F	1.21	1.02	4	4	9,651	8,151	37	28

4. I-880 Connector to I-80 East

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	B	C	0.53	0.59	2	2	2,118	2,349	0	0
Maximum Marine/Maximum Rail	C	C	0.55	0.60	2	2	2,180	2,398	62	49
Minimum Marine/Minimum Rail	B	C	0.54	0.59	2	2	2,158	2,379	40	30
Maximum Marine/Minimum Rail	C	C	0.55	0.60	2	2	2,190	2,403	72	54
Reduced Harbor Fill	C	C	0.55	0.60	2	2	2,182	2,400	64	51

5. I-880 Connector to I-80 West

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	A	A	0.25	0.31	2	2	1,010	1,240	0	0
Maximum Marine/Maximum Rail	A	A	0.27	0.32	2	2	1,074	1,260	64	20
Minimum Marine/Minimum Rail	A	A	0.27	0.32	2	2	1,076	1,272	66	32
Maximum Marine/Minimum Rail	A	A	0.27	0.31	2	2	1,075	1,256	65	16
Reduced Harbor Fill	A	A	0.27	0.31	2	2	1,074	1,258	64	18

6. I-880 North of 7th St.

Alternative	Level of Service		Volume/Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	B	B	0.40	0.45	3	3	2,419	2,687	0	0
Maximum Marine/Maximum Rail	B	B	0.41	0.45	3	3	2,460	2,719	41	32
Minimum Marine/Minimum Rail	B	B	0.40	0.44	3	3	2,400	2,666	-19	-21
Maximum Marine/Minimum Rail	B	B	0.39	0.44	3	3	2,368	2,640	-51	-47
Reduced Harbor Fill	B	B	0.41	0.45	3	3	2,465	2,722	46	35

† Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-2 (Continued)
Freeway Level of Service Calculations - PM Peak Hour

7. I-880 South of 7th St.

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	B	C	0.49	0.68	3	3	2,928	4,060	0	0
Maximum Marine/Maximum Rail	B	C	0.51	0.71	3	3	3,063	4,232	135	172
Minimum Marine/Minimum Rail	B	C	0.50	0.69	3	3	2,984	4,150	56	90
Maximum Marine/Minimum Rail	B	C	0.48	0.67	3	3	2,867	4,022	-61	-38
Reduced Harbor Fill	B	C	0.51	0.70	3	3	3,061	4,223	133	163

8. I-880 North of I-980

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	B	B	0.48	0.50	3	3	2,869	3,015	0	0
Maximum Marine/Maximum Rail	B	B	0.49	0.53	3	3	2,963	3,166	94	151
Minimum Marine/Minimum Rail	B	B	0.49	0.53	3	3	2,944	3,150	75	135
Maximum Marine/Minimum Rail	B	B	0.48	0.53	3	3	2,859	3,185	-10	170
Reduced Harbor Fill	B	B	0.49	0.53	3	3	2,956	3,169	87	154

9. I-880 South of I-980

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	D	C	0.93	0.76	4	4	7,426	6,051	0	0
Maximum Marine/Maximum Rail	E	D	0.94	0.78	4	4	7,518	6,202	92	151
Minimum Marine/Minimum Rail	E	D	0.94	0.77	4	4	7,514	6,186	88	135
Maximum Marine/Minimum Rail	E	D	0.94	0.78	4	4	7,524	6,221	98	170
Reduced Harbor Fill	E	D	0.94	0.78	4	4	7,518	6,205	92	154

10. I-880 North of I-238

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	F	1.06	1.19	4	4	8,474	9,555	0	0
Maximum Marine/Maximum Rail	F	F	1.07	1.21	4	4	8,566	9,706	92	151
Minimum Marine/Minimum Rail	F	F	1.07	1.21	4	4	8,562	9,690	88	135
Maximum Marine/Minimum Rail	F	F	1.07	1.22	4	4	8,572	9,725	98	170
Reduced Harbor Fill	F	F	1.07	1.21	4	4	8,566	9,709	92	154

11. I-880 South of I-238

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	F	F	1.20	1.21	4	4	9,574	9,655	0	0
Maximum Marine/Maximum Rail	F	F	1.20	1.22	4	4	9,636	9,768	62	113
Minimum Marine/Minimum Rail	F	F	1.20	1.22	4	4	9,632	9,750	58	95
Maximum Marine/Minimum Rail	F	F	1.21	1.22	4	4	9,640	9,782	66	127
Reduced Harbor Fill	F	F	1.20	1.22	4	4	9,636	9,770	62	115

12. I-238

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB†	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	E	D	0.95	0.79	3	3	5,699	4,748	0	0
Maximum Marine/Maximum Rail	E	D	0.96	0.80	3	3	5,738	4,778	39	30
Minimum Marine/Minimum Rail	E	D	0.96	0.80	3	3	5,741	4,778	42	30
Maximum Marine/Minimum Rail	E	D	0.96	0.80	3	3	5,743	4,779	44	31
Reduced Harbor Fill	E	D	0.96	0.80	3	3	5,738	4,778	39	30

† Freeway segment is excluded from compliance with Alameda County CMA Standards.

Table J.8-2 (Continued)
Freeway Level of Service Calculations - PM Peak Hour

13. I-580 East of I-238

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	D	D	0.89	0.81	5	5	8,888	8,147	0	0
Maximum Marine/Maximum Rail	D	D	0.89	0.82	5	5	8,927	8,176	39	29
Minimum Marine/Minimum Rail	D	D	0.89	0.82	5	5	8,930	8,178	42	31
Maximum Marine/Minimum Rail	D	D	0.89	0.82	5	5	8,932	8,178	44	31
Reduced Harbor Fill	D	D	0.89	0.82	5	5	8,927	8,176	39	29

14. I-580 West of I-238

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	D	1.01	0.86	4	4	8,058	6,887	0	0
Maximum Marine/Maximum Rail	F	D	1.01	0.86	4	4	8,058	6,887	0	0
Minimum Marine/Minimum Rail	F	D	1.01	0.86	4	4	8,060	6,887	2	0
Maximum Marine/Minimum Rail	F	D	1.01	0.86	4	4	8,058	6,887	0	0
Reduced Harbor Fill	F	D	1.01	0.86	4	4	8,058	6,887	0	0

15. I-580 East of I-980/SH 24

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	C	1.20	0.73	4	4	9,602	5,825	0	0
Maximum Marine/Maximum Rail	F	C	1.20	0.73	4	4	9,602	5,825	0	0
Minimum Marine/Minimum Rail	F	C	1.20	0.73	4	4	9,604	5,825	2	0
Maximum Marine/Minimum Rail	F	C	1.20	0.73	4	4	9,602	5,825	0	0
Reduced Harbor Fill	F	C	1.20	0.73	4	4	9,602	5,825	0	0

16. I-580 West of I-980/SH 24

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB†	WB	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	C	1.09	0.73	5	5	10,851	7,322	0	0
Maximum Marine/Maximum Rail	F	C	1.09	0.73	5	5	10,871	7,334	20	12
Minimum Marine/Minimum Rail	F	C	1.09	0.73	5	5	10,865	7,330	14	8
Maximum Marine/Minimum Rail	F	C	1.09	0.73	5	5	10,864	7,330	13	8
Reduced Harbor Fill	F	C	1.09	0.73	5	5	10,871	7,334	20	12

17. I-980

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	NB†	SB	NB	SB	NB	SB	NB	SB	NB	SB
No Project	E	B	0.94	0.48	4	4	7,538	3,864	0	0
Maximum Marine/Maximum Rail	E	B	0.94	0.48	4	4	7,521	3,854	-17	-10
Minimum Marine/Minimum Rail	E	B	0.94	0.48	4	4	7,532	3,860	-6	-4
Maximum Marine/Minimum Rail	E	B	0.94	0.48	4	4	7,530	3,858	-8	-6
Reduced Harbor Fill	E	B	0.94	0.48	4	4	7,521	3,854	-17	-10

18. SH 24 East of I-580

Alternative	Level of Service		Volume/ Capacity		Number of Lanes		Traffic Volume		Change in Volume	
	EB†	WB†	EB	WB	EB	WB	EB	WB	EB	WB
No Project	F	B	1.11	0.46	4	4	8,905	3,717	0	0
Maximum Marine/Maximum Rail	F	B	1.11	0.46	4	4	8,907	3,719	2	2
Minimum Marine/Minimum Rail	F	B	1.11	0.47	4	4	8,910	3,720	5	3
Maximum Marine/Minimum Rail	F	B	1.11	0.47	4	4	8,910	3,720	5	3
Reduced Harbor Fill	F	B	1.11	0.46	4	4	8,908	3,719	3	2

† Freeway segment is excluded from compliance with Alameda County CMA Standards.

Appendix J.9
Vehicle Delay at Railroad Crossings

Table J.9-1
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Summary of Project Alternatives

Crossing Street	Gate Down Time (min./day)					Vehicular Delay (hours/day)				
	Project Alternative					Project Alternative				
	No Action	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill	No Action	Max. Marine/Max. Rail	Min. Marine/Min. Rail	Max. Marine/Min. Rail	Reduced Harbor Fill
1. Cutting Boulevard	44	56	47	58	58	16.4	23.0	18.0	23.9	23.9
2. Gilman Street	46	59	49	61	61	11.4	16.3	12.8	16.9	16.9
3. Camelia Street	46	59	49	61	61	1.2	1.7	1.3	1.8	1.8
4. Cedar Street	46	59	49	61	61	2.2	3.2	2.5	3.3	3.3
5. Virginia Street	46	59	49	61	61	1.0	1.5	1.2	1.5	1.5
6. Hearst Avenue	46	59	49	61	61	3.8	5.4	4.2	5.6	5.6
7. Addison Street	46	59	49	61	61	1.2	1.7	1.3	1.8	1.8
8. Bancroft Way	46	59	49	61	61	1.2	1.7	1.3	1.8	1.8
9. 67th Street	56	72	60	74	74	1.7	2.5	2.0	2.6	2.6
10. 66th Street	56	72	60	74	74	1.7	2.5	2.0	2.6	2.6
11. 65th Street	56	72	60	74	74	2.3	3.4	2.7	3.5	3.5
12. Market Street	70	70	70	70	70	4.6	4.6	4.6	4.6	4.6
13. M. L. King Blvd.	70	70	70	70	70	0.4	0.4	0.4	0.4	0.4
14. Clay Street	70	70	70	70	70	2.1	2.1	2.1	2.1	2.1
15. Washington Street*	70	70	70	70	70	0.8	0.8	0.8	0.8	0.8
16. Broadway*	70	70	70	70	70	16.1	16.1	16.1	16.1	16.1
17. Franklin Street*	70	70	70	70	70	2.2	2.2	2.2	2.2	2.2
18. Webster Street	70	70	70	70	70	4.3	4.3	4.3	4.3	4.3
19. Oak Street	70	70	70	70	70	4.6	4.6	4.6	4.6	4.6
20. 5th Avenue	29	29	29	29	29	3.6	3.6	3.6	3.6	3.6
21. 29th Avenue	19	19	19	19	19	2.2	2.2	2.2	2.2	2.2
22. Fruitvale Avenue	19	19	19	19	19	5.3	5.3	5.3	5.3	5.3
23. 37th Avenue	19	19	19	19	19	0.3	0.3	0.3	0.3	0.3
Total Delay	90.6	109.4	95.9	111.7	111.7	90.6	109.4	95.9	111.7	111.7

* Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.
Nolle and Associates 1996
Dowling Associates 1996

Table J.9-2
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
No Project Alternative

Crossing Street	Number of Trains in Both Directions					Total	Train Speed (mph)	
	Passenger *		Freight *		Switchers *		Passenger	Freight/ Switchers
	1200	600	6000	1200	300			
1. Cutting Boulevard	4	20	18			42	60	60
2. Gilman Street	4	20	17	4	2	47	60	60
3. Camelia Street	4	20	17	4	2	47	60	60
4. Cedar Street	4	20	17	4	2	47	60	60
5. Virginia Street	4	20	17	4	2	47	60	60
6. Hearst Avenue	4	20	17	4	2	47	60	60
7. Addison Street	4	20	17	4	2	47	60	60
8. Bancroft Way	4	20	17	4	2	47	60	60
9. 67th Street	4	20	17	4	2	47	45	45
10. 66th Street	4	20	17	4	2	47	45	45
11. 65th Street	4	20	17	4	2	47	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

* Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Table J.9-3
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
No Project Alternative

Crossing Street	Gate Down Time Per Train (minutes)					Total Gate Down Time (min./day)
	Passenger *		Freight *		Switchers *	
	1200	600	6000	1200	300	
1. Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	44
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	46
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	46
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	46
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	46
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	46
7. Addison Street	0.7	0.6	1.6	0.7	0.6	46
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	46
9. 67th Street	0.8	0.7	2.0	0.8	0.6	56
10. 66th Street	0.8	0.7	2.0	0.8	0.6	56
11. 65th Street	0.8	0.7	2.0	0.8	0.6	56
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

* Values shown below train type represent the length of each train in feet.

** Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Source: Nolte and Associates 1996

Table J.9-4
FISCO/Port Vision 2000 EIS/EIR
Traffic Volumes at Railroad Crossings
No Project Alternative

Crossing Street	Jurisdiction	Average Daily Traffic for Year Traffic Was Counted	Year Traffic Was Counted	Average Daily Traffic (2010)
1. Cutting Boulevard	Richmond	26,892	1994	31,270
2. Gilman Street	Berkeley	17,413	1986	21,830
3. Camelia Street	Berkeley		1996 (Estimated Max.)	2,280
4. Cedar Street	Berkeley	3,413	1986	4,280
5. Virginia Street	Berkeley	1,584	1986	1,980
6. Hearst Avenue	Berkeley	5,758	1986	7,220
7. Addison Street	Berkeley		1996 (Estimated Max.)	2,280
8. Bancroft Way	Berkeley		1996 (Estimated Max.)	2,280
9. 67th Street	Emeryville		1996 (Estimated Max.)	2,280
10. 66th Street	Emeryville		1996 (Estimated Max.)	2,280
11. 65th Street	Emeryville		1995	3,080
12. Market Street	Oakland	3,655	1996	3,920
13. M. L. King Blvd.	Oakland	309	1976	360
14. Clay Street	Oakland	1,531	1977	1,800
15. Washington Street	Oakland	613	1976	720
16. Broadway	Oakland	11,833	1978	13,800
17. Franklin Street	Oakland	1,626	1976	1,920
18. Webster Street	Oakland	3,111	1974	3,690
19. Oak Street	Oakland	3,340	1976	3,930
20. 5th Avenue	Oakland	6,224	1976	7,330
21. 29th Avenue	Oakland	9,034	1990	9,960
22. Fruitvale Avenue	Oakland	22,304	1993	24,220
23. 37th Avenue	Oakland	1,070	1994	1,160

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Note: Escalation factors were applied to escalate counts to 1996 estimated values as follows:

Cities of Richmond & Berkeley - 1% per year; City of Oakland 1/2% per year.

Table J.9-5
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
No Project Alternative

Crossing Street	Jurisdiction	Average Daily Traffic (2010)	Total Gate Down Time (min./day)	Vehicular Delay (hours/day)
1. Cutting Boulevard	Richmond	31,270	44	16.4
2. Gilman Street	Berkeley	21,830	46	11.4
3. Camelia Street	Berkeley	2,280	46	1.2
4. Cedar Street	Berkeley	4,280	46	2.2
5. Virginia Street	Berkeley	1,980	46	1.0
6. Hearst Avenue	Berkeley	7,220	46	3.8
7. Addison Street	Berkeley	2,280	46	1.2
8. Bancroft Way	Berkeley	2,280	46	1.2
9. 67th Street	Emeryville	2,280	56	1.7
10. 66th Street	Emeryville	2,280	56	1.7
11. 65th Street	Emeryville	3,080	56	2.3
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

* Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996

Dowling Associates 1996

Table J.9-6
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Maximum Marine/Maximum Rail Alternative

Crossing Street	Number of Trains in Both Directions						Train Speed (mph)	
	Passenger *		Freight *		Switchers *	Total	Passenger	Freight/ Switchers
	1200	600	6000	1200	300			
1. Cutting Boulevard	4	20	26			50	60	60
2. Gilman Street	4	20	26	2	2	54	60	60
3. Camelia Street	4	20	26	2	2	54	60	60
4. Cedar Street	4	20	26	2	2	54	60	60
5. Virginia Street	4	20	26	2	2	54	60	60
6. Hearst Avenue	4	20	26	2	2	54	60	60
7. Addison Street	4	20	26	2	2	54	60	60
8. Bancroft Way	4	20	26	2	2	54	60	60
9. 67th Street	4	20	26	2	2	54	45	45
10. 66th Street	4	20	26	2	2	54	45	45
11. 65th Street	4	20	26	2	2	54	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

* Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Table J.9-7
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Maximum Marine/Maximum Rail Alternative

Crossing Street	Gate Down Time Per Train (minutes)					Total Gate Down Time (min./day)
	Passenger *		Freight *		Switchers *	
	1200	600	6000	1200	300	
1. Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	56
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	59
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	59
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	59
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	59
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	59
7. Addison Street	0.7	0.6	1.6	0.7	0.6	59
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	59
9. 67th Street	0.8	0.7	2.0	0.8	0.6	72
10. 66th Street	0.8	0.7	2.0	0.8	0.6	72
11. 65th Street	0.8	0.7	2.0	0.8	0.6	72
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

* Values shown below train type represent the length of each train in feet.

** Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Source: Nolte and Associates 1996

Table J.9-8
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Maximum Marine/Maximum Rail Alternative

Crossing Street	Jurisdiction	Average Daily Traffic (2010)	Total Gate Down Time (min./day)	Vehicular Delay (hours/day)
1. Cutting Boulevard	Richmond	31,270	56	23.0
2. Gilman Street	Berkeley	21,830	59	16.3
3. Camelia Street	Berkeley	2,280	59	1.7
4. Cedar Street	Berkeley	4,280	59	3.2
5. Virginia Street	Berkeley	1,980	59	1.5
6. Hearst Avenue	Berkeley	7,220	59	5.4
7. Addison Street	Berkeley	2,280	59	1.7
8. Bancroft Way	Berkeley	2,280	59	1.7
9. 67th Street	Emeryville	2,280	72	2.5
10. 66th Street	Emeryville	2,280	72	2.5
11. 65th Street	Emeryville	3,080	72	3.4
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

* Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996

Dowling Associates 1996

Table J.9-9
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Minimum Marine/Minimum Rail Alternative

Crossing Street	Number of Trains in Both Directions						Train Speed (mph)	
	Passenger *		Freight *		Switchers *	Total	Passenger	Freight/ Switchers
	1200	600	6000	1200	300			
1. Cutting Boulevard	4	20	20			44	60	60
2. Gilman Street	4	20	20	2	2	48	60	60
3. Camelia Street	4	20	20	2	2	48	60	60
4. Cedar Street	4	20	20	2	2	48	60	60
5. Virginia Street	4	20	20	2	2	48	60	60
6. Hearst Avenue	4	20	20	2	2	48	60	60
7. Addison Street	4	20	20	2	2	48	60	60
8. Bancroft Way	4	20	20	2	2	48	60	60
9. 67th Street	4	20	20	2	2	48	45	45
10. 66th Street	4	20	20	2	2	48	45	45
11. 65th Street	4	20	20	2	2	48	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

* Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Table J.9-10
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Minimum Marine/Minimum Rail Alternative

Crossing Street	Gate Down Time Per Train (minutes)					Total Gate Down Time (min./day)
	Passenger *		Freight *		Switchers *	
	1200	600	6000	1200	300	
1. Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	47
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	49
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	49
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	49
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	49
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	49
7. Addison Street	0.7	0.6	1.6	0.7	0.6	49
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	49
9. 67th Street	0.8	0.7	2.0	0.8	0.6	60
10. 66th Street	0.8	0.7	2.0	0.8	0.6	60
11. 65th Street	0.8	0.7	2.0	0.8	0.6	60
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

* Values shown below train type represent the length of each train in feet.

** Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Source: Nolte and Associates 1996

Table J.9-11
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Minimum Marine/Minimum Rail Alternative

Crossing Street	Jurisdiction	Average Daily Traffic (2010)	Total Gate Down Time (min./day)	Vehicular Delay (hours/day)
1. Cutting Boulevard	Richmond	31,270	47	18.0
2. Gilman Street	Berkeley	21,830	49	12.8
3. Camelia Street	Berkeley	2,280	49	1.3
4. Cedar Street	Berkeley	4,280	49	2.5
5. Virginia Street	Berkeley	1,980	49	1.2
6. Hearst Avenue	Berkeley	7,220	49	4.2
7. Addison Street	Berkeley	2,280	49	1.3
8. Bancroft Way	Berkeley	2,280	49	1.3
9. 67th Street	Emeryville	2,280	60	2.0
10. 66th Street	Emeryville	2,280	60	2.0
11. 65th Street	Emeryville	3,080	60	2.7
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

* Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996

Dowling Associates 1996

Table J.9-12
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Maximum Marine/Minimum Rail Alternative

Crossing Street	Number of Trains in Both Directions					Train Speed (mph)		
	Passenger *		Freight *		Switchers *	Total	Passenger	Freight/ Switchers
	1200	600	6000	1200					300
1. Cutting Boulevard	4	20	27			51	60	60
2. Gilman Street	4	20	27	2	2	55	60	60
3. Camelia Street	4	20	27	2	2	55	60	60
4. Cedar Street	4	20	27	2	2	55	60	60
5. Virginia Street	4	20	27	2	2	55	60	60
6. Hearst Avenue	4	20	27	2	2	55	60	60
7. Addison Street	4	20	27	2	2	55	60	60
8. Bancroft Way	4	20	27	2	2	55	60	60
9. 67th Street	4	20	27	2	2	55	45	45
10. 66th Street	4	20	27	2	2	55	45	45
11. 65th Street	4	20	27	2	2	55	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

* Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Table J.9-13
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Maximum Marine/Minimum Rail Alternative

Crossing Street	Gate Down Time Per Train (minutes)					Total Gate Down Time (min./day)
	Passenger *		Freight *		Switchers *	
	1200	600	6000	1200	300	
1. Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	58
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	61
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	61
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	61
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	61
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	61
7. Addison Street	0.7	0.6	1.6	0.7	0.6	61
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	61
9. 67th Street	0.8	0.7	2.0	0.8	0.6	74
10. 66th Street	0.8	0.7	2.0	0.8	0.6	74
11. 65th Street	0.8	0.7	2.0	0.8	0.6	74
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

* Values shown below train type represent the length of each train in feet.

** Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Source: Nolte and Associates 1996

Table J.9-14
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Maximum Marine/Minimum Rail Alternative

Crossing Street	Jurisdiction	Average Daily Traffic (2010)	Total Gate Down Time (min./day)	Vehicular Delay (hours/day)
1. Cutting Boulevard	Richmond	31,270	58	23.9
2. Gilman Street	Berkeley	21,830	61	16.9
3. Camelia Street	Berkeley	2,280	61	1.8
4. Cedar Street	Berkeley	4,280	61	3.3
5. Virginia Street	Berkeley	1,980	61	1.5
6. Hearst Avenue	Berkeley	7,220	61	5.6
7. Addison Street	Berkeley	2,280	61	1.8
8. Bancroft Way	Berkeley	2,280	61	1.8
9. 67th Street	Emeryville	2,280	74	2.6
10. 66th Street	Emeryville	2,280	74	2.6
11. 65th Street	Emeryville	3,080	74	3.5
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

* Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996

Dowling Associates 1996

Table J.9-15
FISCO/Port Vision 2000 EIS/EIR
Train Traffic At Roadway Crossings
Reduced Harbor Fill Alternative

Crossing Street	Number of Trains in Both Directions						Train Speed (mph)	
	Passenger *		Freight *		Switchers *	Total	Passenger	Freight/ Switchers
	1200	600	6000	1200	300			
1. Cutting Boulevard	4	20	27			51	60	60
2. Gilman Street	4	20	27	2	2	55	60	60
3. Camelia Street	4	20	27	2	2	55	60	60
4. Cedar Street	4	20	27	2	2	55	60	60
5. Virginia Street	4	20	27	2	2	55	60	60
6. Hearst Avenue	4	20	27	2	2	55	60	60
7. Addison Street	4	20	27	2	2	55	60	60
8. Bancroft Way	4	20	27	2	2	55	60	60
9. 67th Street	4	20	27	2	2	55	45	45
10. 66th Street	4	20	27	2	2	55	45	45
11. 65th Street	4	20	27	2	2	55	45	45
12. Market Street	10	30	4	4		48	15	15
13. M. L. King Blvd.	10	30	4	4		48	15	15
14. Clay Street	10	30	4	4		48	15	15
15. Washington Street	10	30	4	4		48	15	15
16. Broadway	10	30	4	4		48	15	15
17. Franklin Street	10	30	4	4		48	15	15
18. Webster Street	10	30	4	4		48	15	15
19. Oak Street	10	30	4	4		48	15	15
20. 5th Avenue	2	10	4	4		20	40	20
21. 29th Avenue	2	10	4	4		20	60	40
22. Fruitvale Avenue	2	10	4	4		20	60	40
23. 37th Avenue	2	10	4	4		20	60	40

* Values shown below train type represent the length of each train in feet.

Source: Nolte and Associates 1996

Table J.9-16
FISCO/Port Vision 2000 EIS/EIR
Gate Down Time At Roadway Crossings
Reduced Harbor Fill Alternative

Crossing Street	Gate Down Time Per Train (minutes)					Total Gate Down Time (min./day)
	Passenger *		Freight *		Switchers *	
	1200	600	6000	1200	300	
1. Cutting Boulevard	0.7	0.6	1.6	0.0	0.0	58
2. Gilman Street	0.7	0.6	1.6	0.7	0.6	61
3. Camelia Street	0.7	0.6	1.6	0.7	0.6	61
4. Cedar Street	0.7	0.6	1.6	0.7	0.6	61
5. Virginia Street	0.7	0.6	1.6	0.7	0.6	61
6. Hearst Avenue	0.7	0.6	1.6	0.7	0.6	61
7. Addison Street	0.7	0.6	1.6	0.7	0.6	61
8. Bancroft Way	0.7	0.6	1.6	0.7	0.6	61
9. 67th Street	0.8	0.7	2.0	0.8	0.6	74
10. 66th Street	0.8	0.7	2.0	0.8	0.6	74
11. 65th Street	0.8	0.7	2.0	0.8	0.6	74
12. Market Street	1.4	1.0	5.0	1.4	0.0	70
13. M. L. King Blvd.	1.4	1.0	5.0	1.4	0.0	70
14. Clay Street	1.4	1.0	5.0	1.4	0.0	70
15. Washington Street**	1.4	1.0	5.0	1.4	0.0	70
16. Broadway**	1.4	1.0	5.0	1.4	0.0	70
17. Franklin Street**	1.4	1.0	5.0	1.4	0.0	70
18. Webster Street	1.4	1.0	5.0	1.4	0.0	70
19. Oak Street	1.4	1.0	5.0	1.4	0.0	70
20. 5th Avenue	0.8	0.7	3.9	1.2	0.0	29
21. 29th Avenue	0.7	0.6	2.2	0.8	0.0	19
22. Fruitvale Avenue	0.7	0.6	2.2	0.8	0.0	19
23. 37th Avenue	0.7	0.6	2.2	0.8	0.0	19

* Values shown below train type represent the length of each train in feet.

** Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

Source: Nolte and Associates 1996

Table J.9-17
FISCO/Port Vision 2000 EIS/EIR
Vehicle Delay at Railroad Crossings
Reduced Harbor Fill Alternative

Crossing Street	Jurisdiction	Average Daily Traffic (2010)	Total Gate Down Time (min./day)	Vehicular Delay (hours/day)
1. Cutting Boulevard	Richmond	31,270	58	23.9
2. Gilman Street	Berkeley	21,830	61	16.9
3. Camelia Street	Berkeley	2,280	61	1.8
4. Cedar Street	Berkeley	4,280	61	3.3
5. Virginia Street	Berkeley	1,980	61	1.5
6. Hearst Avenue	Berkeley	7,220	61	5.6
7. Addison Street	Berkeley	2,280	61	1.8
8. Bancroft Way	Berkeley	2,280	61	1.8
9. 67th Street	Emeryville	2,280	74	2.6
10. 66th Street	Emeryville	2,280	74	2.6
11. 65th Street	Emeryville	3,080	74	3.5
12. Market Street	Oakland	3,920	70	4.6
13. M. L. King Blvd.	Oakland	360	70	0.4
14. Clay Street	Oakland	1,800	70	2.1
15. Washington Street*	Oakland	720	70	0.8
16. Broadway*	Oakland	13,800	70	16.1
17. Franklin Street*	Oakland	1,920	70	2.2
18. Webster Street	Oakland	3,690	70	4.3
19. Oak Street	Oakland	3,930	70	4.6
20. 5th Avenue	Oakland	7,330	29	3.6
21. 29th Avenue	Oakland	9,960	19	2.2
22. Fruitvale Avenue	Oakland	24,220	19	5.3
23. 37th Avenue	Oakland	1,160	19	0.3

* Gate down time is reported although there are no gates present at these crossings; the reported gate down time is used as a surrogate for delay to motorists at the crossing.

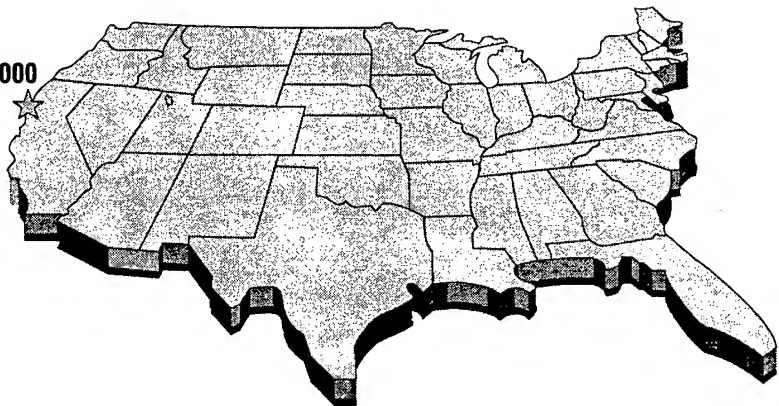
Sources: City Traffic/Planning staffs for the jurisdictions shown.

Nolte and Associates 1996

Dowling Associates 1996

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FISCO/Vision 2000



APPENDIX K NOISE

K-1: SUMMARY OF NOISE LIMITS ESTABLISHED IN THE OAKLAND NOISE ORDINANCES

Appendix K

Noise

Table K-1
Summary of Noise Limits Established in the Oakland Noise Ordinances

Noise Source	Affected Properties	Time Period	Specified or Equivalent Noise Limits
Construction and demolition activities lasting less than 10 days	Residential land uses, on weekdays	7 am - 7 pm 7 pm - 7 am	80 dBA, maximum 65 dBA maximum; 50 dBA, 1-hr Leq
	Residential land uses, on weekends and federal holidays land uses, on weekdays	9 am - 8 pm 8 pm - 9 am	65 dBA, maximum 65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial and Industrial land uses on weekdays	7 am - 7 pm 7 pm - 7 am	85 dBA, maximum 85 dBA maximum; 70 dBA, 1-hr Leq
	Commercial and Industrial land uses, on weekends and federal holidays	9 am - 8 pm 8 pm - 9 am	70 dBA, maximum 85 dBA maximum; 70 dBA, 1-hr Leq
Construction and demolition activities lasting 10 days or more	Residential land uses, on weekdays	7 am - 7 pm 7 pm - 7 am	65 dBA, maximum 65 dBA maximum; 50 dBA, 1-hr Leq
	Residential land uses, on weekends and federal holidays	9 am - 8 pm 8 pm - 9 am	55 dBA, maximum 65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial and industrial land uses, on weekdays	7 am - 7 pm 7 pm - 7 am	70 dBA, maximum 85 dBA maximum; 70 dBA, 1-hr Leq
	Commercial and industrial land uses, on weekends and federal holidays	9 am - 8 pm 8 pm - 9 am	60 dBA, maximum 85 dBA maximum; 70 dBA, 1-hr Leq
Residential air conditioning units installed before June 11, 1996	All properties	Any time	55 dBA, maximum
Residential air conditioning units installed after June 11, 1996	All properties	Any time	50 dBA, maximum
Enclosed commercial refrigeration units within 200 feet of residential properties	Residential land uses	10 pm - 7 am	60 dBA, maximum outside enclosure

Noise Source	Affected Properties	Time Period Specified or Equivalent Noise Limits	
Other stationary or mobile commercial refrigeration units	Residential and Civic land uses	7 am - 10 pm	80 dBA maximum; 65 dBA, 1-hr Leq
		10 pm - 7 am	65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial land uses	Any time	85 dBA maximum; 70 dBA, 1-hr Leq
	Manufacturing, Agriculture, and Extractive land uses	Any time	90 dBA maximum; 75 dBA, 1-hr Leq
Enclosed commercial ventilation exhaust systems within 200 feet of residential properties	Residential land uses	10 pm - 7 am	60 dBA, maximum outside enclosure
Other commercial exhaust ventilation systems	Residential and Civic land uses	7 am - 10 pm	80 dBA maximum; 65 dBA, 1-hr Leq
		10 pm - 7 am	65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial land uses	Any time	85 dBA maximum; 70 dBA, 1-hr Leq
	Manufacturing, Agriculture, and Extractive land uses	Any time	90 dBA maximum; 75 dBA, 1-hr Leq
Sound amplification equipment (including portable or car audio equipment) operated in any park without a permit	Parks and adjacent property	Any time	Audible at a distance of 50 feet or more from the noise source
Sound amplification equipment operated in any park under terms of a valid permit	Adjacent to park boundaries	Any time	80 dBA, maximum
Testing of stationary alarms or other emergency signaling devices		7 am - 7 pm	No more than 60 seconds
		7 pm - 7 am	Prohibited
Testing of complete emergency response systems including signaling devices		7 am - 10 pm	No more than once each month
		10 pm - 7 am	Prohibited
Activated burglar and fire alarms (including car alarms)		Any time	Must be deactivated within 15 minutes
Stationary non-emergency signaling devices, bells, whistles, etc. (excluding devices at churches and schools)		Any time	No more than 10 seconds in any hour

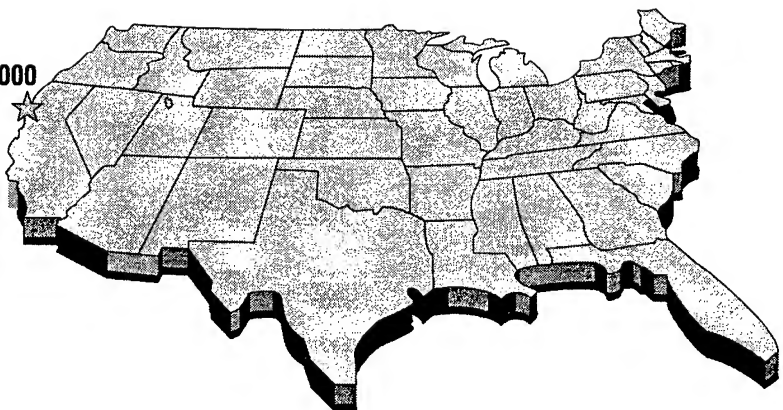
Noise Source	Affected Properties	Time Period	Specified or Equivalent Noise Limits
Loading and unloading activities	Residential land uses	9 pm - 6 am	Must not create a noise disturbance or exceed general noise limits in the Oakland Planning Code
Domestic power tools and machinery	Any land use	9 pm - 6 am	Must not create a noise disturbance or exceed general noise limits in the Oakland Planning Code
Noise sources not specifically covered by other limits (general Planning Code limits)	Residential and Civic land uses	7 am - 10 pm	80 dBA maximum; 65 dBA, 1-hr Leq
		10 pm - 7 am	65 dBA maximum; 50 dBA, 1-hr Leq
	Commercial land uses	Any time	85 dBA maximum; 70 dBA, 1-hr Leq
	Manufacturing, Agriculture, and Extractive land uses	Any time	90 dBA maximum; 75 dBA, 1-hr Leq

Note: Oakland Ordinance 11894 also contains general prohibitions against excessive or annoying noise and vibration. Federal and state law generally preempt local regulation of traffic, rail, and aircraft noise.

Source: City of Oakland Ordinances 11893, 11894, and 11895.

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FISCO/Vision 2000



APPENDIX L HAZARDOUS WASTE AND MATERIALS

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Table L-1
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
511D	511D	fuel, diesel	83,967
511D	511D	fuel, unleaded gasoline	92,463
320	321	detergents	200
511	511	cleaners	1,377
		deodorizers	459
123	123W	acetylene	368
		antifreeze	1,027
		hydraulic fluid	108
		solvents	860
		lubricants	890
123	123E	adhesives	500
		glazing compound	128
		herbicides	302
		joint compound	417
		sealers	542
		solvents	644
542	542	acetone	360
		adhesives	1,517
		brake fluid	132
		cement	490
		citric acid	3,200
		cleaners	76,238
		coating compounds	3,752
		coolant fluid	16,360
		corrosion prevention compd.	2,435
		deodorizers	241
		deoxidizer	1,848
		descaler	3,246
		detergent	4,798
		disinfectant	416
		fire extinguisher	832
		floor wax	6,053
		grease	3,677
		isopropyl alcohol	1,296
		hydraulic fluid	35,551
		ion exchange compound	872
		masonry surface conditioner	1,620
		methyl ethyl ketone	306

Table L-1 (continued)
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
		oil	6,623
		paint	41,860
		polish	456
		sealers	2,239
		sodium hypochlorite	1,140
		solvents	11,876
		strippers	2,523
		sulfuric acid	187
		tetrachloroethylene	24,127
		thinners	502
		toluene	1,052
		trichloroethane	2,006
		wire rope exposed	525
310	310	Amerold OSC	200
		cleaners	1,196
		detergents	1,400
		fire extinguisher	100
		floor wax	625
		freon	390
		magnesium chloride	320
		oil	100
		paint	500
		polish	180
		refractory mix	1,310
		sealant	250
		thinner	500
711	711	absorbents	8,440
		acetylene	10,977
		activated desiccant	2,090
		adhesives	2,232
		isopropyl alcohol	210
		ammonia	18,407
		antifreeze	39,400
		argon	23,370
		brake fluid	2,800
		calibration fluid	1,050
		carbon dioxide	66,833
		carbon removal compd.	1,400
		caulking compd.	120
		cement	120
		chlorine	159,300

Table L-1 (continued)
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
		cleaners	38,010
		coating compounds	3,205
		corrosion prevention compound	1,963
		cutting fluid	1,272
		detergent	29,180
		developers	420
		disinfectants	3,552
		ethyl acetate	945
		fire extinguisher	1,700
		fixers	2,790
		floor wax	4,436
		freon	152,668
		grease	241,674
		helium	44,735
		hydraulic fluid	143,897
		hydrogen	156,100
		inspection penetrants	620
		insulating compounds.	20,106
		ion exchange compound	361,550
		laundry starch	1,840
		leak test/detect compound	11,623
		lubricants	495
		mercury	180
		nitrogen gas	177,920
		oils	41,600
		oxygen gas	124,091
		paint	3,540
		pesticides	1,992
		petroleum	920
		potassium carbonate	3,200
		potassium hydroxide	9,426
		propane	4,160
		sealers	950
		silicone compounds.	110
		sodium chloride	1,800
		sodium hydroxide	800
		solvents	31,760
		spackling paste	315
		strippers	4,900
		thinners	180
		titrating solutions	812
		toners	1,230

Table L-1 (continued)
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
342	342	absorbents caulking compound cleaners concrete moisture displacer oil silicone compounds. solvents stucco mix	606 1,200 400 1,840 105 450 220 324 180
441	441 B	lubricants solvents	156 550
533	533	concrete sealers solvents	4,800 900 440
534	534	abrasive blasting materials glass traffic beads	2,500 1850
541	541	absorbents adhesives cement drywall compound grease lubricants oil paint roof sealing compound sealers thinners urethane welding rods	1,000 4,896 13,217 7,565 216 1,345 389 200 1,700 1,477 1,044 209 209
833	833	acetylene adhesives antifreeze cement cleaners corrosion prevention compound grease hydraulic fluid oil oxygen gas	1,460 100 220 1,280 1,648 440 3,780 14,140 24,748 2,200

Table L-1 (continued)
1995 FISCO Hazardous Materials Inventory

Parcel No.	Building No.	Material Category	Maximum Quantity (pounds)
		paint	454
		solvents	3,064
		thinners	180

pounds = pounds per year
Source: US Navy 1996h

TABLE L-2. PHASES OF THE CERCLA REMEDIATION PROCESS

Phases of the CERCLA remediation process are described below.

Site Discovery (SD). A site is an area that has had or has the potential for a hazardous substance release. A single facility may contain several sites to be studied under the IRP. Occasionally, potential sites are discovered by searching through records or during construction projects.

Preliminary Assessment (PA). This assessment identifies areas of potential contamination and evaluates each area to determine if a threat to human health or the environment exists. A PA report is developed from readily available information, such as past inventory records, aerial photographs, employee interviews, existing analytical data, and an activity visit. A PA may recommend no further action, additional work under the IRP, or a removal action.

Site Inspection (SI). This inspection is conducted after the PA when additional information is needed to evaluate a site. The collection and analysis of soil, sediment, and surface and ground water samples may help to determine the need for further study. Information needed for hazard ranking also is collected. An SI may recommend a site for no action, further study, or an immediate removal action. The PA and SI are often performed concurrently.

Hazard Ranking System (HRS). This system provides a uniform method of scoring or ranking the potential risk of a site where a hazardous substance has been present. A site in this context refers to the entire FISCO complex. The EPA developed the HRS to prioritize clean-up efforts. The EPA evaluates the draft HRS packages and proposes any facility scoring 28.5 or higher for inclusion on the National Priorities List (NPL). Facilities that are listed on the NPL receive the highest priority. FISCO is not on the NPL.

Removal Actions (RO). In the event of an immediate threat or potential threat to human health or the environment, a short-term mitigating or cleanup action may be implemented. The goal of the removal action is to isolate the contamination hot spots and their source from all biological receptors. Usually, removal actions do not completely clean up a site, and additional remediation steps are required.

Remedial Investigation (RI). This investigation is performed to more fully define the nature and extent of the contamination at a site and to evaluate possible methods of cleaning up the site. During the investigation, ground water, surface water, soil, sediment, and biological samples are collected and analyzed to determine the type and concentration of each contaminant. Samples are collected at different areas and depths to help determine the spread of the contamination. The RI process at FISCO is typically done in two phases—Phase I, site characterization and Phase II, characterization of the constituents of concern, the migration pathways, and the potential hazards to human health and the environment.

Feasibility Study (FS). The feasibility study identifies and evaluates all applicable site cleanup alternatives. As part of the study, a risk assessment is performed to quantify the level of risk to the public and environment posed by the site. Often, the risk assessment determines which alternative is selected for final remediation. Each alternative is evaluated for effectiveness in protecting human health and the environment, ease of implementation, and overall cost. Typically, the RI and FS are performed concurrently.

Remedial Action Plans (RAP)/Record of Decision (ROD). These two documents are essentially the same. RAP is the state term while ROD is federal. The RAP/ROD documents the reasoning behind the selection of a particular cleanup alternative. A RAP/ROD is required even if the most feasible alternative is no action.

Remedial Design (RD). After the RAP/ROD is signed, the remedial design phase can begin. In the RD, specific construction parameters and/or equipment specifications are presented for the selected cleanup alternative.

Remedial Action (RA). During the remedial action phase, the selected cleanup technology is implemented. RA can be as simple as soil excavation or as complicated as a complete ground water treatment system which may operate for many years. Remedial action work plans for long-term remediations include operation and maintenance (O&M) plans. O&M efforts continue until the cleanup is complete.

Long-term Monitoring. After completion of the RA, federal, state, or local regulatory agencies may require subsequent monitoring of the site.

TABLE L-3. FISCO INSTALLATION RESTORATION PROGRAM SITES

The following is a brief discussion of the ten remedial investigation (RI) sites and the remediation areas based on the information presented in the final scoping plan (US Navy 1992b) the Final Environmental Baseline Survey (EBS) (US Navy 1996h) and the Final Base Realignment and Closure Cleanup Plan (BCP) (US Navy 1996i).

Remedial Investigation Area I

Area 1 consists of sites IRP 01 (Lot 612), IRP 03 (Building 511E), IRP 12 (former location of Building 414), IRP 13 (former location of Building 411), and IRP 14 (Buildings 511 and 511B). A brief description of each IRP site is as follows.

IRP 01: Lot 612 - Hazardous Waste Storage Lot. Lot 612 is located in the northeastern portion of FISCO and consists of three large buildings (Buildings 612, 612A, and 612C) and three small buildings (612B, 612E, and 612F) surrounded by an open area. This RI site was used by the Defense Reutilization and Marketing Office (DRMO) as a scrapyard and storage area for materials from military installations throughout the Bay Area up to 1980. Materials stored and staged at this site include hazardous wastes, such as paints, waste solvents, pesticides, halogenated and nonhalogenated solvents, thinners, corrosives, and heavy metal sludge. In addition, PCBs also may have been stored at this site. In 1981, Public Works Center (PWC) took over the site and had a private contractor remove and dispose of all on-site waste (US Navy 1992b).

As part of the SI, 14 soil borings were drilled in the vicinity of the eight wooden 20 feet by 20 feet open storage bins and the staging area location northeast of the bins, and 26 soil samples were collected. Analytical results for the soil samples indicate that petroleum hydrocarbons, such as diesel and toluene, are present in the soil at this site. In addition, some solvents, such as acetone and vinyl chloride, were detected (US Navy 1992b).

According to the remedial phase I investigation report, one surface soil samples was collected east of Building 612-B. Analytical results indicated that the concentrations for seven metals, including lead, exceeded preliminary remediation goals (PRG) for residential land uses. In addition, the arsenic concentration in this sample exceeded PRGs for industrial land uses (US Navy 1995d).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of lead and mercury-contaminated surface soil is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 03: Building 511-E - Stained Oil Areas. Building 511-E is located in the northeastern portion of FISCO and consists of a building and concrete pad, which were constructed in 1942. The building was used up to 1950 as a rigging loft for cranes. Since 1980, the area immediately surrounding Building 511-E was used for

handling materials that required redrumming or overpacking. Between 1980 and 1983, this area was used to redrum waste materials (US Navy 1992b).

Four soil borings were drilled at the site as part of the SI, and soil samples were collected. Analytical results for the soil samples indicated that petroleum hydrocarbons, volatile organic compounds (VOCs), and semivolatile compounds (SVOCs) were detected in the soil (US Navy 1992b).

According to the remedial phase I investigation report, two sludge samples were collected from a drainage sump adjacent to Building 511B. High concentrations of solvents, SVOCs, petroleum hydrocarbons and lead were reported to have been detected in these samples (US Navy 1995d).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of asphalt contaminated with lead is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 12: Former Building 414 - Transportation Maintenance Shop and Lot. IRP 12 is located in the north central portion of FISCO and consists of building 414 and a surrounding lot. The structure was constructed in the 1940s and was used for storage up to 1984. The building was later used for maintenance activities on Navy vehicles and equipment from 1984 to 1989. The building was condemned after the 1989 Loma Prieta earthquake and later demolished. Based on the PA conducted in 1991, a Phase I RI was conducted at this IRP site. Currently a Phase II RI/FS is pending (US Navy 1992b; US Navy 1996i).

IRP 13: Former Building 411 - Transportation Maintenance Shop and Lot. IRP 13 is located in the northern portion of FISCO and consists of a building surrounded by an open area. The site was used up to 1989 as a maintenance area for vehicles and light equipment. The building was condemned after the 1989 Loma Prieta earthquake. Five hydraulic lifts and two waste oil underground storage tanks (USTs) (Tanks 411-1 and 411-2) were located at the site. The USTs were removed in the fall of 1992 as part of the Navy Clean Contract (US Navy 1992b; US Navy 1996i).

As part of the SI, seven soil borings were drilled at the site. Soil and ground water samples were collected, and the analytical results for the soil samples indicated that petroleum hydrocarbons, VOCs, and SVOCs were present in the soil at this site. VOCs were detected in some of the ground water samples collected from the site (US Navy 1992b).

Currently, a phase II RI/FS and field scale pilot test are to be conducted at this site (US Navy 1996i).

IRP 14: Buildings 511 & 511B - Heavy Equipment Repair. IRP 14 site is located in the northern portion of FISCO. The site consists of two buildings surrounded by

an open lot. Building 511 was used as a locomotive repair shop from 1942, when it was constructed, to 1975. This building was later used as a repair shop for heavy equipment from 1975 to 1989. Currently, this building is used to store and classify recyclable dry goods, such as paper and cardboard. Building 511-B was used up to 1989 as an automobile and small truck wash (US Navy 1992b).

Four USTs formerly were located at this site— two 12,300-gallon diesel USTs (Tanks 511F-1 and 511F-2), one 2,300-gallon gasoline UST (Tank 511F-3), and one 750-gallon waste oil UST (Tank 511-1). The USTs were removed in the fall of 1992 as part of the Navy Clean contract. Analytical results for the soil samples collected during the UST removal activities indicated that a release of petroleum hydrocarbons has occurred in the vicinity of the USTs.

Under the SI, six soil borings were drilled in the vicinity of the USTs, oil water separator, and the shop drains. Soil, ground water, and sludge samples were collected during the SI investigation. Analytical results for the soil and ground water samples indicate the presence detectable concentrations of VOCs, SVOCs, petroleum hydrocarbons, and metals (US Navy 1992b). Currently, a phase II RI/FS is to be conducted at this site (US Navy 1996i).

Remedial Investigation Area II

Area II consists of IRP 02 (former Buildings 740C and 738), IRP 15 (Lots 642, 643, and 644), and IRP 21 (Lot 645). A brief discussion of each site follows.

IRP 02: Buildings 740C and 738 - Stained Soil Areas. IRP 02 is located in the southeastern part of the FISCO and consists of two attached buildings (Buildings 740C and 738), a closed Imhoff tank and one 3,600-gallon UST (Tank 740). The western ends of the buildings were used to stage equipment, drums, and materials, which included lubricants, solvents, paints, and motor oil. The buildings were used as an auto hobby shop until they were closed in 1985 due to structural problems. Wastes from automotive repair, such as sandblasting grit, lubricants, solvents, and paints, were reportedly disposed of in an unpaved area surrounding the Imhoff tank. Tank 740 was removed in the fall of 1992 as part of the Navy Clean Contract (US Navy 1992b).

Seven soil borings were drilled and one composite surface sample was collected at the site as part of the SI. Based on the analytical results for the soil and ground water samples collected, petroleum products, VOCs, SVOCs, and metals were detected in the soil and ground water samples (US Navy 1992b).

Based upon the results of the sampling data, a phase II RI/FS was recommended at Building 740C and Building 738 to develop remedial alternatives, to delineate the extent of contamination, to determine the source of contamination and potential pathways, and to evaluate metals in the ground water (US Navy 1996i).

IRP 15: Lots 642, 643, and 644 - Petroleum Based Products and Cleaning Solvent Storage. IRP 15 is located in the southern portion of FISCO and consists of three paved lots separated by a railroad spurs. These lots were used as a drum storage area for petroleum-based products and cleaning solvents. Materials included oils, hydraulic fluids, antifreeze, and to a lesser extent, dry cleaning solvents, malathion, and insulating oils. The pavement in this area has been stained due to minor spills and leaks from drums previously stored at this site (US Navy 1992b).

A soil gas survey was conducted at this site in the fall of 1990 as part of the SI. Twenty-five sample locations were selected, and VOCs were detected in the soil gas samples collected from several of the sampling locations. An additional fourteen soil borings were drilled, and soil and ground water samples were collected. Analytical results for the soil and ground water samples indicated detectable concentrations of petroleum hydrocarbons, VOCs, and SVOCs. No inorganic analytical data for soils were available for lots 642, 643, and 644 (US Navy 1992b).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of surface soils contaminated with petroleum compounds is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 21: Lot 645 - Open Storage Area. Lot 645 is located in the south central portion of FISCO. This area has been used to store large bulky ship parts, such as propellers, rudder components, and proper drive shafts. During the 1991 environmental assessment conducted at this site, field personnel noted a greenish gray sand (sand blasting grit) covering much of the surface in the western portion of the site. Based on surface soil sampling, this sand blasting grit was reported to contain elevated metal concentrations, and the soil in this area was removed under a RO in November 1994 (US Navy 1996h; US Navy 1996i).

Remedial Investigation Area III

Area 3 consists of IRP 18 (Building 534) and IRP 20 (Lot 532). A brief discussion of each site follows.

IRP 18: Building 534 - Paint Shop Accumulation Area. IRP 18 is located in the central portion of FISCO and consists of a building surrounded by a lot. This site was used for painting and sandblasting. Paint and solvents were stored in the lot adjacent to the building (US Navy 1992b). Currently, a phase II RI/FS is to be conducted at this site (US Navy 1996i).

IRP 20: Lot 532 - Former 90-Day Hazardous Waste Accumulation Area. IRP 20 is located in the central portion of FISCO and consists of an open area surrounding a shed. This site was reported to have been used as a 90-day accumulation area for hazardous waste (US Navy 1992b). Currently, a phase II RI/FS is to be conducted at this site (US Navy 1996i).

Miscellaneous IRP Sites

IRP 04: Lot 111: PCB Transformer Storage Area. IRP 04 is located in the northwestern portion of FISCO, and consists of a single building and concrete pad, which was used to store electrical equipment and some pesticides from 1942 until the 1980s. Since the 1980s, it has only been used to store new electrical transformers. Based on the analytical results from a composite soil sample collected at the site, pesticides and PCBs have been detected in the soil (US Navy 1992b).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of surface soils contaminated with PCBs is scheduled to be completed in the summer of 1996 (US Navy 1996i).

IRP 05: Building 431 - Hazardous Materials Classification. Building 431 is located in the central portion of FISCO and has been primarily used since 1985 to classify and temporarily store hazardous materials for up to 90 days. Hazardous materials handled at this site include combustible liquids, petroleum products, corrosives, oxidizers, peroxides, calcium, sodium nitrates, and lead paints. In addition to the handling of hazardous materials, dip tanks located in the eastern portion of the building were used for various metal processing operations, such as degreasing. Prior to 1985, this site was used as a general storage area. A limited scope expanded site inspection (ESI) has been proposed in the vicinity of the dip tanks at this site (US Navy 1992b).

IRP 17: Buildings 721, 722, 723, 731, 732, and 733 - Navy Resale Warehouse Buildings. IRP 17 is located in the eastern portion of FISCO, and consists of six buildings, which are used to store large quantities of various bulk goods for distribution to Navy exchange stores. Currently this site is being investigated for radiological contamination. Once the radiological assessment is completed, and assuming no contamination is discovered, this site will be designated as a no action site (US Navy 1996i).

IRP 19: Building 710 - The Public Works Center Maintenance Area. Building 710B is located in the northeastern portion of FISCO and is used as the PWC maintenance area for the operation of the storm drain system, heavy equipment storage, and office space. Hazardous materials or wastes generally are not stored or handled at this site; however, the surface in several areas of the site is stained with oil. In addition, floating oil was occasionally observed in the sewer and an old PCB spill was cleaned up at this site in the late 1970s. A limited scope ESI was conducted and the site was recommended for RO (US Navy 1992b; US Navy 1996i).

Currently, a phase II RI/FS and RO are to be conducted at this site. Removal of surface soils contaminated with PCBs is scheduled to be completed in the summer of 1996 (US Navy 1996i).

Table L-4
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM
1	243	Yes, Non-Friable
1	343	Yes, Non-Friable
1	443	Yes, Non-Friable
1	543	Friable ACM Suspected
1	633	Yes, Non-Friable
1	642	ACM Not Suspected
1	649	Yes, Non-Friable
1	730	Yes, Non-Friable
1	Shed 443	ACM Not Suspected
2	741	Yes, Non-Friable
2	742	Friable ACM Suspected
2	746	Friable ACM Suspected
2	750	Yes, Non-Friable
2	754	Friable ACM Suspected
2	755	Yes, Non-Friable
2	834	Yes, Non-Friable
2	841	Yes, Non-Friable
2	842	Yes, Non-Friable
2	844	Friable ACM Suspected
2	845	Yes, Non-Friable
2	846	Yes, Non-Friable
2	848	Yes, Non-Friable
2	850	ACM Not Suspected
2	742A	Yes, Non-Friable
2	841A	Friable ACM Suspected
2	841B	Yes, Non-Friable
2	841C	Friable ACM Suspected
2	841G	ACM Not Suspected
2	841H	ACM Not Suspected
3	612	Yes, Non-Friable
3	700	ACM Not Suspected
3	710	Yes, Non-Friable
3	711	Yes, Non-Friable
3	712	Yes, Non-Friable
3	721	Yes, Non-Friable
3	722	Yes, Non-Friable
3	723	Yes, Non-Friable

Table L-4 (continued)
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM
3	724	Yes, Non-Friable
3	731	Yes, Non-Friable
3	732	Yes, Non-Friable
3	723	Yes, Non-Friable
3	724	Yes, Non-Friable
3	821	Yes, Non-Friable
3	831	Friable ACM Suspected
3	833	Yes, Non-Friable
3	612A	Yes, Non-Friable
3	612B	Yes, Non-Friable
3	612C	Yes, Non-Friable
3	612E	Yes, Non-Friable
3	612F	Yes, Non-Friable
3	612H	ACM Not Suspected
3	622A	ACM Not Suspected
3	710A	Yes, Non-Friable
3	710B	Yes, Non-Friable
3	712C	Yes, Non-Friable
3	733A	Yes, Non-Friable
3	733B	Yes, Non-Friable
4	111	ACM Not Suspected
4	113	Friable ACM Suspected
4	114	ACM Not Suspected
4	116	ACM Not Suspected
4	122	Yes, Non-Friable
4	123	Yes, Non-Friable
4	131	Friable ACM Suspected
4	141	Friable ACM Suspected
4	221	Friable ACM Suspected
4	222	Friable ACM Suspected
4	223	Friable ACM Suspected
4	320	Friable ACM Suspected
4	321	Yes, Non-Friable
4	322	Friable ACM Suspected
4	323	ACM Not Suspected
4	324	ACM Not Suspected
4	325	ACM Not Suspected
4	331	Yes, Non-Friable

Table L-4 (continued)
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM
4	332	Friable ACM Suspected
4	333	Yes, Non-Friable
4	341	Yes, Non-Friable
4	342	Yes, Non-Friable
4	421	Friable ACM Suspected
4	422	Yes, Non-Friable
4	431	Yes, Non-Friable
4	432	Yes, Non-Friable
4	433	Yes, Non-Friable
4	441	Yes, Non-Friable
4	442	Yes, Non-Friable
4	521	Friable ACM Suspected
4	522	Friable ACM Suspected
4	531	Yes, Non-Friable
4	532	Yes, Non-Friable
4	533	Yes, Non-Friable
4	534	ACM Not Suspected
4	541	Yes, Non-Friable
4	542	ACM Not Suspected
4	112E	ACM Not Suspected
4	122A	Yes, Non-Friable
4	342A	Yes, Non-Friable
4	441A	Yes, Non-Friable
4	441B	Yes, Non-Friable
4	522A	Yes, Non-Friable
4	532B	Yes, Non-Friable
4	533B	ACM Not Suspected
4	211	Yes, Non-Friable
4	212	Yes, Non-Friable
4	213	Yes, Non-Friable
4	310	Friable ACM Suspected
4	311	Friable ACM Suspected
4	312	Friable ACM Suspected
4	313	Friable ACM Suspected
4	405	Yes, Non-Friable
4	410	Yes, Non-Friable
4	412	Friable ACM Suspected
4	413	Yes, Non-Friable

Table L-4 (continued)
FISCO Asbestos Containing Material Summary

Lease Area	Building	ACM
4	500	Yes, Non-Friable
4	501	Yes, Non-Friable
4	502	Friable ACM Suspected
4	503	Yes, Non-Friable
4	504	Yes, Non-Friable
4	511	Friable ACM Suspected
4	512	Yes, Non-Friable
4	513	Yes, Non-Friable
4	311A	Yes, Non-Friable
4	412A	Yes, Non-Friable
4	505A	ACM Not Suspected
4	505B	ACM Not Suspected
4	511B	Yes, Non-Friable
4	511D	Yes, Non-Friable
4	511E	Yes, Non-Friable

Source: US Navy 1996h

Table L-5
FISCO Phase I RI Characterization Report
Summary of Sampling Activities
Area 1

Sampling Type	Number of Samples	Sampling Dates	Sample Method	Laboratory Location	Analysis
Soil Gas	28	03/06/94-03/08/94	Geoprobe	On Site	VOC
Surface Soil	1	03/05/94	Disposable Trowel	Off Site	VOC, SVOC, TRPH, Metals
Subsurface Soil	34	03/17/94-03/19/94	Geoprobe	On Site	Headspace VOCs(field screening)
Subsurface Soil	22	03/28/94-03/29/94	Geoprobe	Off Site	VOCs SVOC, TRPH, TOC, Metals
Subsurface Soil	36	06/16/94-06/21/94	Hollow Stem Auger	Off Site	VOC, SVOC, TRPH, TOC ¹ , Metals ² , TCLP ³ , Physical Parameter ⁴
Groundwater	5	04/07/94-04/08/94 (temporary wells)	Bailer/ Peristaltic Pump	Off Site	VOC, SVOC, TRPH, Metals (total and dissolved)
Groundwater	9	06/26/94-06/30/94	Bailer/ Peristaltic Pump	Off Site	VOC, SVOC, Metals (assorted), TRPH

¹TOC analysis was performed on 12 soil samples

²Metals analysis included CLP analysis plus mercury

³TCLP analysis was performed on five soil samples

⁴Physical parameters testing was performed on eight samples and included density, porosity, grain size analysis, total organic carbon, and pH.

VOC = Volatile organic compounds

SVOC = Semivolatile organic compounds

TRPH = Total recoverable petroleum hydrocarbon

Source: US Navy 1996a

Table L-6
FISCO Phase I RI Characterization Report
Summary of Sampling Activities
Area 2

Sampling Type	Number of Samples	Sampling Dates	Sample Method	Laboratory Location	Analysis
Subsurface Soil	12	03/11/94- 03/12/94	Geoprobe	On Site	VOC Headspace
Subsurface Soil	27	03/14/94- 03/15/94	Geoprobe	Off Site	VOC, SVOC, TRPH, Metals
Subsurface Soil	27	06/13/94- 06/15/94	Hollow Stem Auger	On Site	VOC, SVOC, TRPH, TOC ¹ , Metals ² , TCLP ³ , Physical Parameter ⁴
Groundwater	12	06/23/94 06/24/94 06/28/94	Bailer/ Peristaltic Pump	Off Site	VOC, SVOC, TRPH, Metals (dissolved)

¹TOC analysis was performed on six soil samples

²Metals analysis included CLP analysis plus mercury

³TCLP analysis was performed on five soil samples

⁴Physical parameters testing was performed on seven samples and included density, porosity, grain size analysis, total organic carbon, and pH.

VOC = Volatile organic compounds

SVOC = Semivolatile organic compounds

TRPH = Total recoverable petroleum hydrocarbon

Source: US Navy 1996a

Table L-7
FISCO Phase I RI Characterization Report
Summary of Sampling Activities
Basewide Investigation

Sampling Type	Number of Samples	Sampling Dates	Sample Method	Laboratory Location	Analysis
Subsurface Soil	27	03/16/94 03/17/94 03/19/94	Geoprobe	Off Site	CLP Metals
Subsurface Soil	29	03/31/94- 04/05/94	Hollow Stem Auger	Off Site	CLP Metals ¹ , TCLP ²
Groundwater	14	04/13/94- 04/20/94	Bailer/ Peristaltic Pump	Off Site	Metals ³ , TPH, TDS

¹Metals analysis included mercury

²TCLP analysis was performed on six soil samples

³Metals analysis on groundwater included total and dissolved

CLP = Contact Laboratory Program

TCLP = Toxicity characteristic leaching procedure

TPH = Total petroleum hydrocarbon

TDS = Total dissolved solids

Source: US Navy 1996a

Table L-8
FISCO Phase I RI Characterization Report
Monitoring Well Construction Data
Area 1

Well Number	Date Drilled ¹	Well Depth (ft bgs)	Screened Interval (ft bgs)	Aquifer Monitored	Elevation (ft above MLLW) ² Top of Casing	Elevation (ft above MLLW) ² Ground Surface
A1-MW01	06/20/94	12.0	3.0-11.8	Shallow	15.51	13.54
A1-MW02	06/16/94	13.0	3.0-12.8	Shallow	15.23	13.46
A1-MW03	06/16/94	13.0	3.0-13.0	Shallow	13.18	13.35
A1-MW04	06/16/94	11.0	3.0-11.0	Shallow	13.23	13.45
A1-MW05	06/16/94	12.0	3.0-11.8	Shallow	13.96	14.26
A1-MW06	06/16/94	12.0	3.0-11.8	Shallow	15.42	13.50
A1-MW07	06/20/94	12.0	3.0-11.8	Shallow	15.77	13.76
A1-MW08	06/20/94	15.0	3.0-14.8	Shallow	13.51	13.97
A1-MW09	06/21/94	12.0	3.0-11.8	Shallow	15.32	13.34
A1-MW10	06/20/94	13.0	3.0-12.8	Shallow	15.38	13.39
A1-MW11	06/21/94	13.0	3.0-12.8	Shallow	14.67	12.75
A1-MW12	06/20/94	13.0	3.0-12.8	Shallow	14.80	12.90
Temporary Wells						
A1-MW02T	04/01/94	12.8	3.8-12.8	Shallow	14.96	13.65
A1-MW04T	03/29/94	11.7	1.7-11.7	Shallow	14.57	13.39
A1-MW06T	03/29/94	8.2	3.2-8.2	Shallow	15.60	13.41
A1-MW08T	03/29/94	12.7	2.7-12.7	Shallow	16.56	13.44
A1-MW09T	03/29/94	7.2	4.7-7.2	Shallow	15.97	13.18
A1-MW11T	04/01/94	10.2	0.5-10.2	Shallow	16.47	13.05

¹All Area 2 monitoring wells were cased with 2-inch PVC piping

²MLLW - mean lower low water

Source: US Navy 1996a

Table L-9
FISCO Phase I RI Characterization Report
Monitoring Well Construction Data
Area 2

Well Number	Date Drilled ¹	Well Depth (ft bgs)	Screened Interval (ft bgs)	Aquifer Monitored	Elevation (ft above MLLW) ² Top of Casing	Elevation (ft above MLLW) ² Ground Surface
A2-MW01	06/15/94	8.3	3.0-8.1	Shallow	11.75	12.10
A2-MW02	06/15/94	15.0	5.0-14.8	Shallow	11.51	11.78
A2-MW03	06/15/94	13.0	3.0-13.0	Shallow	9.58	10.14
A2-MW04	06/14/94	13.0	3.0-13.0	Shallow	14.63	12.56
A2-MW05	06/14/94	13.0	3.0-13.0	Shallow	14.41	12.43
A2-MW06	06/15/94	9.5	3.0-9.3	Shallow	12.89	10.83
A2-MW07	06/13/94	11.6	3.0-10.8	Shallow	9.66	9.95
A2-MW08	06/13/94	8.5	3.0-8.5	Shallow	14.90	12.92
A2-MW09	06/15/94	10.0	3.0-9.8	Shallow	13.78	11.74

¹All Area 2 monitoring wells were cased with 2-inch PVC piping

²MLLW - mean lower low water

Source: US Navy 1996a

Table L-10
FISCO Phase I RI Characterization Report
Monitoring Well Construction Data
Area 2

Well Number	Date Drilled ¹	Well Depth (ft bgs)	Screened Interval (ft bgs)	Aquifer Monitored	Elevation (ft above MLLW) ² Top of Casing	Elevation (ft above MLLW) ² Ground Surface
A3-MW01	09/19/94	10.0	4.0-10.0	Shallow	NA ³	12.77
A3-MW02	09/19/94	17.0	12.0-17.0	Shallow	NA	11.95
A3-MW03	09/19/94	19.0	14.0-19.0	Shallow	NA	11.95
A3-MW04	09/20/94	8.0	3.0-8.0	Shallow	NA	12.99
A3-MW05	09/20/94	10.0	4.0-10.0	Shallow	NA	13.80
A3-MW06	09/20/94	8.0	3.0-8.0	Shallow	NA	12.51
A3-MW07	09/20/94	9.0	4.0-9.0	Shallow	NA	12.35
A3-MW08	09/20/94	10.0	4.0-10.0	Shallow	NA	13.50

¹All Area 3 monitoring wells were cased with 2-inch PVC piping

²MLLW - mean lower low water

³NA - not available

Source: US Navy 1996a

Table L-11
Groundwater Elevations
UST Sites 211, 331N, 331S, 331E, 332, 334, 511D, 750, 842, and 845

Well ID	Total Depth (btoc)	Screened Interval (btoc)	Well Head Elev (toc-msl)	Date Measured	DTW (btoc)	WL Elev (msl)
UST Site 211						
211-MW1	14.2	4.0-13.0	13.43	1/24/95	4.84	8.59
211-MW2	14.8	4.5-13.5	12.85	1/24/95	4.16	8.69
211-MW3	14.8	3.5-12.5	13.09	1/24/95	4.25	8.84
UST Site 331N						
331N-MW1	14.3	4.0-14.0	112.00	8/17/95	4.59	107.41
				8/30/95	4.00	108.00
331N-MW2	14.5	4.0-14.5	111.47	8/17/95	4.16	107.31
				8/30/95	3.50	107.97
331N-MW3	14.6	4.1-14.1	111.82	8/17/95	4.32	107.50
				8/30/95	3.62	108.20
331N-HMW1	17.9	unknown	111.61	8/30/95	3.71	107.90
UST Site 331S						
331S-MW1	13.6	3.6-12.6	12.54	1/25/95	4.40	8.14
				8/18/95	4.50	8.04
331S-MW2	13.8	3.5-12.5	12.22	1/25/95	5.22	7.00
				8/18/95	5.65	6.57
331S-MW3	13.6	3.5-12.5	12.39	1/25/95	3.41	8.98
				8/18/95	3.17	9.22
UST Site 331E						
331E-MW1	14.0	3.5-12.5	12.49	1/26/95	4.48	8.01
				8/18/95	4.48	8.01
331E-MW2	14.6	3.5-12.5	12.60	1/26/95	4.62	7.98
				8/18/95	5.05	7.55
331E-MW3	14.2	3.5-12.5	12.62	1/26/95	5.00	7.62
				8/18/95	5.41	7.21
UST Site 332						
332-MW1	13.6	3.5-12.5	12.05	1/24/95	6.67	5.38
332-MW2	13.5	3.5-12.5	12.08	1/25/95	5.65	6.43
332-MW3	13.8	3.5-12.5	12.04	1/25/95	6.13	5.91
UST Site 334						
334-MW1	15.0	4.5-14.5	112.22	8/18/95	7.14	105.08
				8/31/95	7.19	105.03
334-MW2	14.3	3.8-13.8	111.68	8/18/95	7.41	104.27
				8/31/95	6.80	104.88
334-MW3	20.0	4.5-19.5	111.70	8/18/95	7.25	104.45
				8/31/95	6.74	104.96

Table L-11 (continued)
Groundwater Elevations
UST Sites 211, 331N, 331S, 331E, 332, 334, 511D, 750, 842, and 845

Well ID	Total Depth (btoc)	Screened Interval (btoc)	Well Head Elev (toc-msl)	Date Measured	DTW (btoc)	WL Elev (msl)
UST Site 511D						
511D-MW1	14.8	3.5-12.5	13.95	1/20/95	4.21	9.74
511D-MW2	15.0	3.5-12.5	12.49	1/20/95	3.11	9.38
511D-MW3	14.5	3.5-12.5	13.17	1/20/95	4.00	9.17
UST Site 750						
750-MW1	14.5	3.8-13.8	12.28	8/2/96	6.24	6.04
750-MW2	13.3	2.8-12.8	12.28	8/2/96	6.21	6.07
750-MW3	14.5	4.5-14.5	12.43	8/2/96	6.50	5.93
UST Site 842						
842-MW1	13.2	2.9-12.9	13.09	1/20/95	3.11	9.98
				3/30/95	3.24	9.85
842-MW2	13.1	2.8-12.8	14.15	1/20/95	4.91	9.24
				3/30/95	5.00	9.15
842-MW3	13.6	3.4-13.4	12.69	1/20/95	3.17	9.52
				3/30/95	3.92	8.77
UST Site 845						
845-MW1	14.0	3.8-13.8	14.14	1/23/95	3.90	10.24
				3/30/95	4.06	10.08
845-MW2	14.2	4.0-14.0	13.93	1/23/95	3.94	9.99
				3/30/95	3.88	10.05
845-MW3	13.5	3.3-13.3	14.31	1/23/95	4.19	10.12
				3/30/95	4.39	9.92

NOTES:

All measurements in feet.

KEY:

btoc - Below top of casing

toc = Top of casing

msl - Above mean sea level

DTW = Depth to water

WL = Water level

Source: ERM West Inc. 1996

Table L-12
FISCO Phase I RI Characterization Report
Monitoring Well Construction Data
Basewide Wells

Well Number	Date Drilled ¹	Well Depth (ft bgs)	Screened Interval (ft bgs)	Aquifer Monitored	Elevation (ft above MLLW) ² Top of Casing	Elevation (ft above MLLW) ² Ground Surface
BW-MW01	04/13/94	11.5	1.5-11.5	Shallow	15.93	13.77
BW-MW02	04/13/94	12.0	4.0-12.0	Shallow	15.01	13.05
BW-MW02	04/01/94	9.4	4.5-9.5	Shallow	15.10	13.35
BW-MW04	04/01/94	8.9	3.0-9.0	Shallow	15.31	13.35
BW-MW05	04/01/94	9.0	3.0-9.0	Shallow	14.10	12.15
BW-MW06	04/01/94	18.1	3.3-18.3	Shallow	11.54	11.99
BW-MW07	04/04/94	12.3	3.0-12.5	Shallow	14.43	12.47
BW-MW08	04/04/94	8.2	3.0-8.0	Shallow	15.37	13.16
BW-MW09	04/05/94	9.8	3.0-10.0	Shallow	13.81	12.09
BW-MW10	04/07/94	13.4	3.0-14.0	Shallow	14.48	12.68
BW-MW11	04/08/94	19.8	14.8-19.5	Deep	15.69	13.77
BW-MW12	04/08/94 04/11/94	25.4	15.0-25.0	Deep	14.70	12.70
BW-MW13	04/12/94	28.7	18.0-28.5	Deep	14.10	12.67
BW-MW14	04/12/94	24.8	14.5-24.5	Deep	15.38	13.37
BW-MW15 ³	04/13/94	25.9	15.0-25.0	Deep	15.35	13.44

¹All Area 2 monitoring wells were cased with 2-inch PVC piping

²MLLW - mean lower low water

³Monitoring well BW-MW15 was destroyed in June 1994

Source: US Navy, 1996a

Table L-13
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	TYPE	SAMPLED	RESULTS
Building 310 Pen	C.O.-01	Liquid	4-18-93	8 ppm
Building 310 Pen	C.O.-02	Liquid	4-18-93	2 ppm
Building 310 Pen	C.O.-03	Liquid	4-18-93	9 ppm
Building 633	COS-148S01	Liquid	4-07-93	< 1 ppm
Building 633	COS-148S01	Liquid	4-07-93	< 1 ppm
Building 633	COS-148S03	Liquid	4-07-93	< 1 ppm
Substation A	K6461229-304	Liquid	4-18-93	< 1 ppm
Substation A	K6461229-305	Liquid	4-18-93	< 1 ppm
Substation A	K6461229-301	Liquid	4-18-93	< 1 ppm
Substation A	0159A7818-1	Liquid	4-18-93	< 1 ppm
Building 123	75B3610	Dry	N/A	N/A
Building 141	A5373	Dry	N/A	N/A
Building 310	37401-001	Dry	N/A	N/A
Building 321	PQD-0282	Liquid	4-18-93	< 1 ppm
Building 411	PRJ-0871	Liquid	4-18-93	< 1 ppm
Building 422	G81E14475	Dry	N/A	N/A
Building 504	PVD-0313	Liquid	4-18-93	< 1 ppm
Building 522	D6661-588	Dry	N/A	N/A
Building 542	PSA-0041	Liquid	4-21-93	< 1 ppm
Lot 754	79A283052	Liquid	4-14-93	< 1 ppm
Lot 754	83A170192	Liquid	4-14-93	< 1 ppm
P-17A & B	83VLO37001	Liquid	4-18-93	< 1 ppm
P-17A & B	83VLO37002	Liquid	4-18-93	< 1 ppm
P-17A & B	83VLO37003	Liquid	4-18-93	< 1 ppm
P-18A & B	83A020104	Liquid	4-18-93	< 1 ppm
P-18A & B	83A020105	Liquid	4-18-93	< 1 ppm
P-18A & B	83A020107	Liquid	4-18-93	< 1 ppm
P-20D	85A123271	Liquid	4-18-93	< 1 ppm
P-20D	85A130696	Liquid	4-18-93	< 1 ppm
P-29A & B	83A020101	Liquid	4-18-93	< 1 ppm
P-29A & B	83A020102	Liquid	4-18-93	< 1 ppm
P-29A & B	83A020106	Liquid	4-18-93	< 1 ppm
P-33	83A032145	Liquid	4-18-93	< 1 ppm

Table L-13 (continued)
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	TYPE	SAMPLED	RESULTS
P-33	83A032147	Liquid	4-18-93	< 1 ppm
P-33	83A032149	Liquid	4-18-93	< 1 ppm
P-46	83VLO36001	Liquid	4-18-93	< 1 ppm
P-46	83VLO36002	Liquid	4-18-93	< 1 ppm
P-46	83VLO36003	Liquid	4-18-93	< 1 ppm
P-52	IZO6481	Liquid	5-05-93	< 1 ppm
P-52	IZO6482	Liquid	5-05-93	< 1 ppm
P-52	IZO6483	Liquid	4-18-93	< 1 ppm
P-69A	82A521676	Liquid	4-18-93	< 1 ppm
P-69A	82A521674	Liquid	4-18-93	< 1 ppm
P-69A	82A521675	Liquid	4-18-93	< 1 ppm
P-7	LZ41584K74	Liquid	4-18-93	< 1 ppm
P-84	86NLO11073	Liquid	4-18-93	< 1 ppm
PIER 5s	01759-1	Dry	N/A	N/A
Removed B-754	886001169	Liquid	4-14-93	< 1 ppm
Building 310 Pen	751-1981	Liquid	4-18-93	9 ppm
Building 844	X62-51221	Dry	N/A	N/A
Building 842	876011266	Liquid	4-22-93	< 1 ppm
R. R. Weigh	83JB884024	Liquid	4-28-93	< 1 ppm
Building 750	POE-0225	Liquid	4-21-93	< 1 ppm
Building 141	14270-1	Liquid	4-22-93	11 ppm
Jst 534	R876011327	Liquid	4-22-93	< 1 ppm
Building 312	886001434	Liquid	4-18-93	< 1 ppm
Building 312	886001433	Liquid	4-18-93	< 1 ppm
Building 310	886001491	Liquid	4-18-93	< 1 ppm
Building 310 Pen	V89585	Dry	N/A	N/A
Building 642	83JA870088	Liquid	4-21-93	< 1 ppm
Building 441A	83JA867089	Liquid	4-28-93	< 1 ppm
Building 541	X228-51221	Dry	N/A	N/A
Building 533	43969	Dry	N/A	N/A
Building 532	43968-3	Dry	N/A	N/A
Building 531	43965-1	Dry	N/A	N/A
Building 441A	83JB875033	Liquid	4-13-93	< 1 ppm

Table L-13 (continued)
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	TYPE	SAMPLED	RESULTS
Building 712N	51221-2	Dry	N/A	N/A
Building 442	43967-1	Dry	N/A	N/A
Building 441	43967-2	Dry	N/A	N/A
Building 141	43965-2	Dry	N/A	N/A
Building 141	43968-1	Dry	N/A	N/A
Building 243	43965-3	Dry	N/A	N/A
Building 344	43966-4	Dry	N/A	N/A
Building 343	43968-4	Dry	N/A	N/A
Building 544	43966-1	Dry	N/A	N/A
Building 443	43966-3	Dry	N/A	N/A
Building 333	43968-2	Dry	N/A	N/A
Building 433	43966-2	Dry	N/A	N/A
Building 221	B-4513	Dry	N/A	N/A
Building 222	B-4510	Dry	N/A	N/A
Building 122	B-3672	Dry	N/A	N/A
Building 754	PQD-0285	Liquid	4-19-93	< 1 ppm
N.M. PKL	PQD-0310	Liquid	4-19-93	< 1 ppm
Building 122	B-3673	Dry	N/A	N/A
Building 113	PQC-0255	Liquid	3-31-93	< 1 ppm
Building 113	PQC-0256	Liquid	3-31-93	< 1 ppm
Building 213	B-3677	Dry	N/A	N/A
Building 320	PQB-0154	Liquid	4-18-93	< 1 ppm
Building 211	PQD-0326	Liquid	4-18-93	< 1 ppm
Building 311	57-10112	Liquid	4-18-93	< 1 ppm
Building 311	PQJ-0857	Liquid	4-18-93	< 1 ppm
Building 410	84JM331190	Liquid	4-18-93	< 1 ppm
Building 502	PQD-0324	Liquid	4-18-93	< 1 ppm
Building 505	PQD-0266	Liquid	4-18-93	< 1 ppm
Building 511	B-3700	Dry	N/A	N/A
Building 311	B-3528	Dry	N/A	N/A
Building 311	B-3581	Dry	N/A	N/A
Building 312	PQC-0169	Liquid	4-27-93	< 1 ppm
Building 311	B-3533	Dry	N/A	N/A

Table L-13 (continued)
Summary of PCB Sampling and Analysis Results for FISCO

LOCATION	SERIAL NUMBER	TYPE	SAMPLED	RESULTS
Building 311	B-3532	Dry	N/A	N/A
Building 513	B-3678	Dry	N/A	N/A
Building 521	PQC-0257	R-Temp	4-22-93	< 1 ppm
Building 413	B-3434	Dry	N/A	N/A
Building 412	B-3524	Dry	N/A	N/A
Building 313	B-3523	Dry	N/A	N/A
Building 313	B-3527	Dry	N/A	N/A
Building 422	PML-1194	Liquid	4-22-93	< 1 ppm
Building 112	UNK (x-467)	Liquid	4-07-93	< 1 ppm
Building 212	B-3676	Dry	N/A	N/A
Building 322	PQD-0323	Liquid	4-18-93	< 1 ppm
Building 331	B-3525	Dry	N/A	N/A
Building 131	PQB-0160	Liquid	4-22-93	< 1 ppm
Building 131	PQB-0144	Liquid	3-30-93	< 1 ppm
Building 131	PQD-0301	Liquid	4-22-93	< 1 ppm
Building 332	B-4476	Dry	N/A	N/A
Building 421	B-3517	Dry	N/A	N/A
Building 421	B-3699	Dry	N/A	N/A
Building 431	B-3433	Dry	N/A	N/A
Building 522	B-3436	Dry	N/A	N/A
Building 612	B-4514	Dry	N/A	N/A
Building 633	83A040026	Liquid	4-07-93	< 1 ppm
Building 633	83A040027	Liquid	4-07-93	< 1 ppm
Building 633	83A040028	Liquid	4-07-93	< 1 ppm
Building 223	X290040	R-Temp	4-19-93	< 1 ppm
Berth B-1	X290039	Liquid	4-18-93	< 1 ppm
N.M. PKL	X290048	R-Temp	4-18-93	< 1 ppm

Source: US Navy 1996h

Table L-14
Summary of FISCO Radiological Materials Handling

Lease Area	Parcel	Records Indicate Storage	Interviews or V/P Inspection Suggests Staging or Other Interim Use	RCS Status
1	444	X		Building demolished. RASO has determined that no follow-up radiological survey work is warranted at the site.
1	742	X		RCS completed, no evidence of release identified.
2	841	X		US NRC released the area for unrestricted use based on the results of a confirmatory survey. RASO has determined that an additional RCS is not necessary.
3	733	X		RCS completed, no evidence of release identified.
3	831	X		RCS pending removal of radiological materials.
4	113	X		RCS underway.
4	331		X	No RCS planned, no storage areas have been identified.
4	332	X	X	RCS underway.
4	333		X	No RCS planned, no storage areas have been identified.
4	341		X	No RCS planned, no storage areas have been identified.

Table L-14 (continued)
Summary of FISCO Radiological Materials Handling

Lease Area	Parcel	Records Indicate Storage	Interviews or V/P Inspection Suggests Staging or Other Interim Use	RCS Status
4	421	X		RCS underway.
4	433		X	No RCS planned, no storage areas have been identified.
4	521		X	No RCS planned, no storage areas have been identified.
5	211	X		RCS underway.
5	212	X		RCS underway.
5	310	X		RCS underway.
5	312	X		RCS underway.
5	313	X		RCS underway.
5	412	X		RCS underway.

Source: US Navy 1996i

Table L-15
FISCO Ordnance Summary

Lease Area	Parcel	Ordnance Material or Operations
2	742	Special weapons shop operations.
4	113	Small arms ammunition storage, indoor firing range.
4	332	Staging of ordnance for shipment.
5	212	Demobilized bombs and missile casings.
5	310	Ammunition and explosives storage.
5	412	Ammunition storage magazine.

Source: US Navy 1996i

Table L-16
Oakland Army Base PCB/Transformers

BRAC Parcel	Building	Transformers	Serial Number	Comments (PCB Sampling Data)
1	MH 18	2	87-512698 N5088	Sampling data not available Sampling data not available
2	161	1	87-51269B	Removed 1988
3	H3 PP6002 141 148	1 3 2	8639 * 87-105-02 86-50907-B	Sampling data not available Sampling data not available Sampling data not available Sampling data not available
4				None present
5	PP3406	1	*	Sampling data not available
6	905	1	87-51159	Sampling data not available
7				None present
8				None present
9	1 6	2 1	90527-1 W208092 8600791-1	Sampling data not available Sampling data not available Sampling data not available
10	PP2700	3	GE718605566K GE718606566K GE719683566K	1.1 ppm 1.3 ppm 7.5 ppm
11	808 812	3 2	* 6902416 6902382	12 ppm 13 ppm 18 ppm
12	806	3	*	17 ppm 22 ppm 15 ppm
13	PP3814 PP2104	3 3	* * 6485279	12 ppm 13 ppm 18 ppm
14				None present
15	PP1116	1	*	34 ppm
16	PP1002 PP4001	1 1	6895231 *	Sampling data not available
17	PP1011	3	7092857 7092859 7092861	570 ppm 840 ppm 810 ppm
18	762	4	68A8719 69AL15915 88A063738 69AJ1209	35 ppm < 1 ppm 3 ppm < 1 ppm
19	PP1003 780 793	1 3 1	84-5-21 90A213663 90A220722 90A220723 88-1-29616	12 ppm Sampling data not available for remaining equipment in Study Area

Table L-16 (continued)
Oakland Army Base PCB/Transformers

20	740	1	81J0419202	Sampling data not available
21	PP5105	2	*, 12814352	2.5 ppm
	PP5202	1	*	13 ppm
22	PP5613	1	G575341-65K	28 ppm
	660	1	H317921-70-P	Sampling data not available
23	640	1	73296	66 ppm Scheduled for removal
	640	2	73296	< 1 ppm
	(New Installs)		87-51269A	< 1 ppm
24	PP5202	1	*	7.9 ppm
	647	1	6897774	250 ppm
	PP5302			
25	590	2	756772	110 ppm
			X63210	Dry
26	None Present			

* Serial number is unreadable for data source.

Note: Some data gaps in the PCB inventory and past removal, retrofill, and remediation response actions are anticipated for Oakland Army Base

Source: US Army Corps of Engineers 1996

Table L-17
Oakland Army Base Asbestos

BRAC Parcel	Facility Number	Square Feet	Year Constructed	Asbestos Containing Material Information
2	161	79,152	1942	P7 Transit Shed - vinyl floor tiles in northwest offices on first floor, woven paper/tape on duct system over northwest offices
7	916	1,218	1942	AIS Office - vinyl floor tiles throughout building
8	991	3,476	1942	RR Engine Ship - cementitious siding on exterior walls was not sampled but assumed to contain asbestos
9	1	161,983	1942	Office Headquarters - vinyl floor tiles throughout building, pipe covering behind walls, perimeter hard wall plaster. Cementitious exhaust pipe in janitor's closet on first floor of Wing 2 not sampled, but assumed to contain asbestos
9	4	4,600	1942	POV - vinyl 9" x 9" floor tiles throughout building
9	6	16,128	1966	Communication/ADP - vinyl 9" x 9" floor tiles throughout building, acoustical tiles in Room 7A, pipe covering above ceiling in mechanical room
10	60	13,256	1942	Cafeteria - vinyl flooring throughout building, pipe covering and mudded joint packages on attic hot water lines
10	70	6,715	1952	Military Police - vinyl 9" x 9" and 1' x 1' floor tiles throughout building
10	85	9,597	1941	Print Plant - vinyl floor tiles throughout building
10	88	11,134	1919	Storage/Forms - vinyl floor tiles, raw asbestos material, pipe covering, linoleum
10	90	10,556	1941	AV Safety Mort. - vinyl 9" x 9" floor tiles throughout building, linoleum at entrance to projector room
10	99	29,624	1918	AAFES Warehouse - vinyl floor tiles throughout building
11	808	235,040	1942	Warehouse 808 - vinyl floor tiles in the office are on the mezzanine
11	812	18,345	1944	Vehicle Maintenance Shop - mudded joint packings and woven paper/tape on breaching in mechanical room, mudded joint packings along north wall between offices, pipe coverings in upstairs storeroom, vinyl floor tiles in offices and locker room. Cementitious siding in room off main office, room at east end of ship and along perimeter walls, and cementitious pipe at west end of building were not sampled but assumed to contain asbestos.
11	821	20,000	1943	Storage - roofing material. Cementitious piping above heaters in east half of building were not sampled but assumed too contain asbestos

Table L-17 (continued)
Oakland Army Base Asbestos

11	823	20,000	1942	Box and Crate Shop - nonfriable materials assumed asbestos containing were cementitious siding and piping on west side of men's restroom
12	806	233,640	1942	MOTBA Warehouse 806 - vinyl floor tiles at north side of offices at east end of building
12	807	233,640	1942	MOTBA Warehouse 807 - vinyl floor tiles in north side offices. Cementitious pipe off all space heaters and throughout two east wings of building were not sampled but assumed to contain asbestos.
13	804	233,640	1941	Warehouse 804 - vinyl floor tiles in mortuary office. Non-friable asbestos includes cementitious panels behind east office gas heater, cementitious pipe in northwest corner, and fire doors throughout building
13	805	233,640	1942	Warehouse 805 - vinyl floor tiles in office along west wall, northwest corner women's restroom. Cementitious piping along north and west sides were not sampled but assumed to contain asbestos
14	802	233,640	1941	Warehouse 802 - vinyl floor tiles in women's restroom, southwest corner of Bay 5, northwest corner of office, and employees break room. Cementitious piping in officer and fire doors were not sampled but assumed to contain asbestos
14	803	233,640	1941	AAFES Warehouse - vinyl floor tiles in women's restroom, southwest corner of Bay 5, northwest corner of office, and employee break room. Cementitious piping in offices and fire doors were not sampled but assumed to contain asbestos.
16	830	2,401	1957	Autocraft Shop- pipe covering and mudded joint packings on domestic water and exhaust lines along north wall
16	833	6,052	1942	AFGE Union Hall - vinyl floor tiles on main level. Cementitious siding on exterior of building was not sampled but assumed to contain asbestos
16	834	1,209	1981	Motor Pool Dispatch - vinyl floor tiles throughout building
17	840	4,912	1951	Paint Shop - Cementitious piping in paint shop and cementitious siding around restroom were not sampled but assumed to contain asbestos
18	762	13,638	1965	Dispensary - vinyl floor tiles throughout the building
19	780	39,818	1955	Barracks - vinyl floor tiles throughout the building
19	796	45,951	1951	PWC Building - boiler/tank insulation, pipe covering with associated mudded joint packings, wrapped cardboard/paper pipe covering and associated mudded joint packings, vinyl floor tiles in first floor janitor's room, Room 305, and annex

Table L-17 (continued)
Oakland Army Base Asbestos

20	701	3,796	1942	Chapel - acoustical/thermal insulation on first, second, and third pillars along south wall
20	726	14,175	1957	Community Center Library - vinyl tiles throughout building, pipe covering and associated mudded joint packings
20	738	7,225	1967	Craft Shop - vinyl floor tiles, hard wall plaster, acoustical tile, wrapped cardboard/paper pipe covering, mudded joint packings
20	740	12,053	1968	Bowling Center - vinyl floor tiles in spectator seating area, between lanes, in the office, and in the concession area
22	650	35,044	1966	Guest House Hotel - vinyl floor tiles throughout the building, mudded joint packings associated with nonsuspect pipe covering on water lines
22	660	10,508	1971	Theater - vinyl floor tiles throughout the building, mudded joint packings associated with pipe coverings in mechanical room, breaching insulation in mechanical room
23	640	332,844	1945	AAFES Warehouse - vinyl floor tiles throughout building, pipe covering and mudded joint packings, corrugated pipe covering on water lines of women's restroom of executive office
23	641	17,772	1942	Package Store, etc. - vinyl floor tiles at south and west ends of building
24	645	2,778	1942	Officers Family Housing - vinyl floor tiles in southeast end of break room
24	646	15,000	1942	Storage Family Housing - 1' x 1' and 9" x 9" vinyl floor tiles in abandoned offices at southwest corner
24	647	8,800	1942	Child Development and Chapel Annex - vinyl floor tiles throughout the building
24	690	12,586	1956	BEQ HQ Detach - vinyl floor tiles throughout building, wrapped cardboard/paper pipe covering and associated mudded joint packings on steam lines in first floor bathroom
25	590	363,543	1944	AAFES Warehouse - vinyl floor tiles throughout parts of the building, pipe coverings and associated mudded joint packings on steam system outside boiler room, mudded joint packings associated with dairy cooler supply lines, tank insulation and mudded joint packings on abandoned hot water system

Source: US Army Corps of Engineers 1996

Table L-18
Oakland Army Base Oil/Water Separators

Oil/Water Separators	Location	Current Status of Use
OWS 1	Building 991, Railroad Roundhouse	Out of service
OWS 2	Building 812	Service 1302nd heavy duty vehicles
OWS 3	North side of POV lot	Clean POVs moved by the 1302nd
OWS 4	Building 99	Service AAFES vehicles
OWS 5	Building 828	Out of service
OWS 6	Building 832	Service garrison vehicles
OWS 7	Building 830	Service garrison POVs
OWS 8	Building 843	Out of service
OWS 9	Building 843	Out of service

Source: US Army Corps of Engineers 1996

Table L-19
Oakland Army Base Aboveground Storage Tanks

BRAC Parcel	Location (Building)	Year Installed	Capacity (gallons)	Tank Material	Substance Stored	Use/Status
4	SW corner of POV loading dock	Not known	550	Not known	Unleaded gas	Active
8	NW of Building 991	Not known	10,000	Steel	Diesel	Active; replaces old UST
10	Building 99	Not known	Not known	Not known	Waste oil	Removed
16	North of Building 830	Not known	550	Not known	Waste oil	Active
16	West of Building 844	1994	10,000	Steel	Diesel	Active; replaces old UST
19	East of Building 780	Not known	550	Not known	Diesel	Active

Source: US Army Corps of Engineers 1996

Table L-20
Oakland Army Base Underground Storage Tanks

Tank Number	BRAC Parcel	Location (Building)	Year Installed	Capacity (gallons)	Tank Material	Substance Stored	Use/Status	Regulatory Status	Future Actions ¹
Original Underground Storage Tanks									
Tank 1 (old)	9	Building 1	1942	1,000	Bare steel	Fuel oil	Fueled Building 1 backup generator. Replaced by new Tank 1.	Removed 1990	1
Tank 2 (old)	9	Between Buildings 1 and 6	1966	550	Bare steel	Diesel	Fueled Building 6 backup generator. Replaced by new Tank 2.	Removed 1990	1
Tank 3 (old)	2	North of Building 161	1942	250	Bare steel	Fuel oil	Fuel source for Building 161 (Wharf 7)	Removed 1990	1
Tank 4 (old)	16	East of Building 833	1957	10,000	Bare steel	Gasoline	Fuel source for base motor pool. Replaced by new tank 3.	Removed 1990	2
Tank 5 (old)	16	East of Building 833	1957	10,000	Bare steel	Gasoline	Fuel source for base motor pool. Replaced by new tank 4.	Removed 1990	2
Tank 6 (old)	8	Northwest of Building 991	1982	10,000	Not known	Diesel	Fuel source for base locomotive. Replaced by new tank 5.	Removed 1994	2
Tank 7 (old)	11	Northeast of Building 812	Not known	550	Bare steel	Waste oil	Serviced Building 812 wash rack.	Removed 1990	2
Tank 8 (old)	11	Northeast of Building 812	1981	550	Bare steel	Waste oil	Serviced Building 812 wash rack. Replaced by new Tank 6.	Removed 1990	2

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

Tank 9 (old)	12	Near Building 807	1981	2,000	Fiberglass	Gasoline	Fuel source for base motor pool.	Removed 1994	3
Tank 10 (old)	16	West of Building 844	1981	10,000	Not known	Diesel	Fuel source for base motor pool. Replaced by new Tank 7.	Removed 1990	3
Tank 11 (old)	16	West of Building 828	1969	5,000	Bare steel	Gasoline	Used Building 828 gas station. Replaced by new Tank 8.	Removed 1990	4
Tank 12 (old)	16	West of Building 828	1969	5,000	Bare steel	Gasoline	Used Building 828 gas station. Replaced by new Tank 9.	Removed 1990	4
Tank 13 (old)	16	West of Building 828	1969	5,000	Bare steel	Gasoline	Used Building 828 gas station. Replaced by new Tank 10.	Removed 1990	4
Tank 14 (old)	16	South of Building 828	1969	550	Bare steel	Waste oil	Used Building 828 gas station. Replaced by new Tank 11.	Removed 1990	1
Tank 15 (old)	25	South of Building 590	1944	12,500	Bare steel	Fuel oil	Building 590 fuel source	Removed 1990	2
Tank 16 (old)	19	South of Building 780	1955	6,000	Bare steel	Fuel oil	Building 780 fuel source	Removed 1990	1
Tank 17 (old)	19	East of Building 793	1954	8,000	Bare steel	Fuel oil	Building 793 fuel source	Removed 1990	1
Tank 18 (old)	16	Southeast of Building 830	1957	500	Not known	Waste oil	Used at Building 830 Auto Craft Shop	Removed 1992	1

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

Tank 19 (old)	9	North of Building 5	1982	500	Fiberglass	Waste liquid	Collected waste liquid from Building 5 floor drain. Renumbered to Tank 12.	Active	
Tank 20 (old)	9	Northeast of Building 6	1986	2,000	Fiberglass	Diesel	Renumbered to Tank 13.	Active	
Tank 21 (old)	4	North of Building 14	1986	550	Fiberglass	Waste oil	Renumbered to Tank 14.	Active	
Removed Underground Storage Tanks									
Tank A (old)	11	Northwest of Building 823	Not known	1,000	Bare steel	Fuel oil	Served Building 823.	Removed 1990	2
Tank B (old)	10	West of Building 99	Not known	1,000	Bare steel	Gasoline	Served Building 99.	Removed 1990	2
Tank C (old)	10	West of Building 99	Not known	1,000	Bare steel	Gasoline	Served Building 99.	Removed 1990	2
Tank D (old)	20	Northeast of Building 726	Not known	1,000	Bare steel	Fuel oil	Served Buildings 726 and 738.	Removed 1990	5
Tank E (old)	19	Near Buildings 780 and 772	Not known	1,000	Not known	Not known	Served Buildings 780 and 772.	Removed	6
Tank F (old)	20	North of Building 701	Not known	500	Not known; fuel oil suspected	Not known; fuel oil suspected	Served Building 701 (Chapel).	Removed 1990	5
Tank G (old)	20	Building 726	Not known	500	Not known	Not known	Served Building 726.	Removed	6
Tank H (old)	20 (?)	Building 734	Not known	1,000	Not known	Not known	Served Building 734.	Removed	6
Tank I (old)	21	Building 737	Not known	1,000	Not known	Not known	Served Building 737.	Removed	6

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

Tank J (old)	22	Building 66	Not known	Not known	Not known	Not known	Served Building 660 (Theater).	Removed	6
Tank K (old)	24	Building 645	Not known	500	Not known	Not known	Served Building 645.	Removed	6
Tank L (old)	24	Building 690	Not known	2,500	Not known	Not known	Served Building 690.	Removed	6
Tank M (old)	13	East of Building 805	1968	1,000	Bare steel	Gasoline	Served Building 805.	Removed 1990	2
Tank N (old)	16	Building 835	1957	500	Not known	Waste oil	Served Building 835.	Removed	1
Tank O (old)	8	Near Building 991	1956	7,500		Diesel	Served Buildings 991. Decommis- sioned and filled with sand in 1982.	Removed 1994	5
Tank P (old)	8	Near Building 991	1956	2,000		Diesel	Served Buildings 991. Decommis- sioned and filled with sand in 1982.	Removed 1994	5
Tank Q (old)	10	West of Building 99	1956	1,000	Bare steel	Gasoline	Served Building 99.	Removed 1990	2
New (Permitted) Underground Storage Tanks									
Tank 1	9	Building 1	1990	1,000	Fiberglass	Diesel	Fuel source for Building 1 backup generator. Replaced by old Tank 1.	Active	
Tank 2	9	Between Buildings 1 and 6	1990	550	Fiberglass	Diesel	Fuel source for Building 6 backup generator. Replaced by old Tank 2.	Active	

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

Tank 3	16	East of Building 832	1990	10,000	Fiberglass	Unleaded gasoline	Fuel source for Building 834 motor pool. Replaced by old Tank 4.	Active	
Tank 4	16	East of Building 832	1990	10,000	Fiberglass	Unleaded gasoline	Fuel source for Building 834 motor pool. Replaced by old Tank 5.	Active	
Tank 5	8	Northwest of Building 991	1982	10,000	Not known	Diesel	Served Building 991. In 1990, replaced old Tank 6. In 1994 replaced with an AST.	Removed 1994	3
Tank 6	11	Southwest of Building 812	1990	550	Fiberglass	Waste oil	Serves Building 812. Replaced old Tank 8. Scheduled for removal.	Active	7
Tank 7	16	In motor pool area near Building 844	1986	10,000	Fiberglass	Diesel	Served AAFES. In 1990, replaced old Tank 10. In 1994, replaced with an AST.	Removed 1994	3
Tank 8	16	West of Building 828	1990	6,000	Fiberglass	Unleaded gasoline	Serves Building 828. Replaced old Tank 11.	Active	Not known
Tank 9	16	West of Building 828	1990	6,000	Fiberglass	Unleaded gasoline	Serves Building 828. Replaced old Tank 12.	Active	Not known
Tank 10	16	West of Building 828	1990	6,000	Fiberglass	Unleaded gasoline	Serves Building 828. Replaced old Tank 13.	Active	7

Table L-20 (continued)
Oakland Army Base Underground Storage Tanks

Tank 11	16	East of Building 828	1990	550	Fiberglass	Waste oil	Replaced old Tank 14.	Active	7
Tank 12*	9	Northwest of Building 5	1982	500	Fiberglass	Waste liquid	Received liquid waste from Building 5 floor drain. Not in use. Renumbered from Tank 19.	Inactive	7
Tank 13	9	Northeast of Building 6	1986	2,000	Fiberglass	Diesel	Fuel source for Building 5 backup generator. Renumbered from Tank 20.	Active	7
Tank 14	4	North of Building 14	1986	500	Fiberglass	Waste oil	Serves Building 4 wash rack. Renumbered from Tank 21.	Active	7

* Identified as Number 12 in UST Monitoring Plan, Number 13 on UST permit.

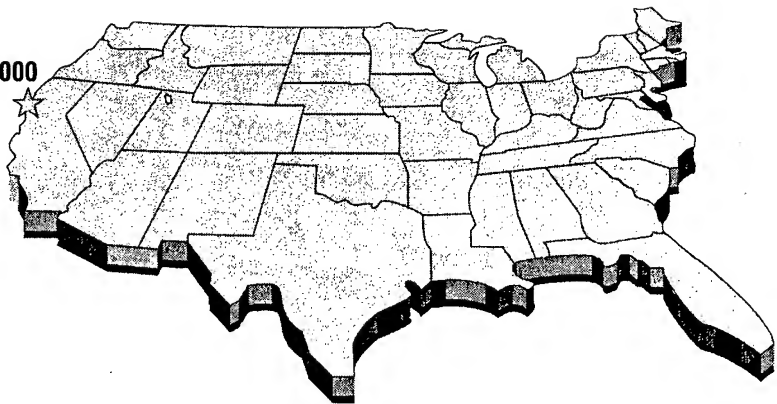
Future Actions:

- 1 = Petitioned for closure
- 2 = Baseline risk assessment
- 3 = Status unclear
- 4 = Groundwater monitoring and closure
- 5 = Additional investigation
- 6 = Initial site characterization
- 7 = Removal

Source: US Army Corps of Engineers 1996

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FISCO/Vision 2000



APPENDIX M

MITIGATION MONITORING PROGRAM

INTRODUCTION	M-1
MITIGATION MONITORING PROGRAM CHECKLIST	M-2
IMPLEMENTATION	M-2
ATTACHMENT 1: MITIGATION MEASURES	M-4
ATTACHMENT 2: VERIFICATION REPORT	M-9

Appendix M

Mitigation Monitoring Program

M.1. INTRODUCTION

Assembly Bill 3180 became law in California on January 1, 1989. This bill requires all public agencies to adopt monitoring or reporting programs when they approve projects subject to environmental impact reports or negative declarations that identify significant impacts. The reporting or monitoring program must be adopted when a public agency makes its findings under the California Environmental Quality Act (CEQA) so that the program can be made a condition of project approval in order to mitigate significant effects on the environment. The program must be designed to ensure compliance during project implementation to mitigate or avoid significant environmental effects.

M.1.1. Purpose

This Mitigation Monitoring Program is designed to serve as a tool for the evaluation of project compliance with mitigation measures identified in the joint environmental impact statement/environmental impact report (EIS/EIR) for the Port of Oakland reuse of FISCO pursuant to its Vision 2000 Program. As required by CEQA Guidelines for the preparation of EIRs, the Port of Oakland will use the Mitigation Monitoring Program to verify inclusion of required project design features and ongoing mitigation measures. The document is not applicable to an EIS, which is the NEPA portion of the environment documentation. The Mitigation Monitoring Program Checklist serves as a summary so that appropriate agencies and the public can easily determine responsibility for implementing measures and the responsible party for verification.

M.1.2. Content

The Mitigation Monitoring Program lists all of the mitigation measures recommended in the Final EIS/EIR for each of the alternatives. The designations for each of the mitigation measures in the checklist are consistent with the Final EIS/EIR. Upon the selection of the alternative to be developed, the Mitigation Monitoring Program will be implemented as part of the project.

M.2. MITIGATION MONITORING PROGRAM CHECKLIST

The Mitigation Monitoring Program Checklist is proposed for monitoring the implementation of the mitigation measures contained in the EIS/EIR. The Port should implement the monitoring program as follows:

- The Port Environmental Department Manager or his designee shall be responsible for coordination of the monitoring program including the monitoring checklist (Attachment 1).
- Each responsible individual or agency shall be accountable for determining whether the mitigation measures contained within the checklist have been complied with. Once all mitigation measures have been complied with, the responsible individual or agency shall submit a Verification Report Form (Attachment 2), or similar form, and a completed checklist to the Port Environmental Department Manager.
- If a responsible individual or agency determines that a noncompliance has occurred, a written notice should be delivered to the Port Environmental Department Manager describing the noncompliance and requiring compliance within a specified period of time. If noncompliance still exists at the expiration of the specified period of time, construction may be halted and fines may be imposed, as appropriate and at the discretion of the Port upon the party responsible for implementation.
- Prior to final sign-off of the building permits, the Director of the Port Engineering Division or his designee shall review the checklist to ensure that all mitigation measures included in the monitoring checklist have been complied with.
- Quarterly, a summary of the status of mitigation measures shall be filed with the Director of the Port Engineering Division.

M.3. IMPLEMENTATION

M.3.1. Management

The Port of Oakland Environmental Department shall be responsible for overall implementation and administration of the Mitigation Monitoring Program Checklist for implementation of the Port of Oakland Vision 2000 Program. As appropriate and applicable, other departments and staff are responsible for monitoring and verification of certain mitigation measures.

If current staffing within the Port Environmental Department cannot absorb the work demand to implement the program, a Compliance Officer shall be hired to manage and coordinate the mitigation monitoring and reporting program. The Compliance Officer would serve under the direction of the Environmental Department Manager.

Duties of the Environmental Department Staff or the Compliance Officer shall include the following:

- Routine inspections and reporting activities.
- Plan checks.
- Coordination of activities of consultants hired by the Port when such expertise and qualifications are necessary.
- Coordination with applicable agencies that have mitigation monitoring and reporting responsibilities.
- Assure follow-up and response to citizens' complaints.
- Develop forms and checklists for reporting. A sample Verification Report Form is included (Attachment 2).
- Develop a work plan and schedule for monitoring activities.
- Maintain the Mitigation Monitoring Checklist or other suitable mitigation compliance summary.
- Coordinate and assure implementation of corrective actions or enforcement measures, as needed.

M.3.2. Funding Mechanism

AB 3180 does not provide a specific funding mechanism for implementation monitoring and reporting programs. However, public agencies have the authority to levy charges, fees or assessments to pay for the program, just as they currently do for the preparation of EIRs and permit documents.

M.3.3. Approval

The initial Mitigation Monitoring Program and later changes will be reviewed and revised by Port Environmental Department staff under the direction of the Department Manager. The initial program, and substantive changes to the program, will then be submitted to the Director of the Engineering Division for review and approval. The Board of Port Commissioners will submit this Mitigation Monitoring Program for approval and adoption as a condition of project approval.

ATTACHMENT 1:
Port of Oakland Vision 2000 Program Final EIR Mitigation Monitoring Program Checklist

Mitigation Measure	Alternatives	Implementation	Monitoring	Confirmation/Comment
<i>Land Use</i>				
Create the public access component of the Vision 2000 Program to mitigate the loss of Middle Harbor Park and one section of the San Francisco Bay Trail.	A, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	None required	
<i>Socioeconomics</i>				
No impacts, no mitigation measures required.	N/A	N/A	N/A	N/A
<i>Public Services</i>				
Explore methods to allow the Spectrum Medical Care clinic to lease nearby property to mitigate the loss of its current location.	A, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	None required	
<i>Cultural Resources</i>				
Amend the existing 1994 MOA among the ACHP, SHPO, Port, and Navy to incorporate specific measures developed in consultation with the Oakland Landmarks Preservation Advisory Board proposed to mitigate impacts from the destruction of historic buildings in the Naval Supply Center Oakland Historic District.	A, B, C, D	<i>Responsibility:</i> Port, EFA West, SHPO, ACHP, Oakland Landmarks Preservation Advisory Board <i>Timing:</i> As a component of the Final EIS/EIR	None required	
Coordinate among ACHP, SHPO, and the Southern Pacific Railroad to develop measures to mitigate impacts from the loss of the Southern Pacific West Oakland Shops Historic District. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A	<i>Responsibility:</i> Port, SHPO, ACHP, Southern Pacific <i>Timing:</i> As a component of the Vision 2000 Program	None required	
Coordinate among ACHP, SHPO, and the Army Corps of Engineers to develop measures to mitigate impacts from the loss of the north training wall. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, C, D	<i>Responsibility:</i> Port, SHPO, ACHP, USACE <i>Timing:</i> As a component of the Vision 2000 Program	None required	
Create a memorandum of agreement among the ACHP, SHPO, Port, and Army that incorporate specific measures to mitigate impacts from the destruction of historic buildings at the Oakland Army Base.	C	<i>Responsibility:</i> Port, SHPO, ACHP, Army <i>Timing:</i> As a component of the Vision 2000 Program	None required	

ATTACHMENT 1 (cont'd):
Port of Oakland Vision 2000 Program Final EIR Mitigation Monitoring Program Checklist

Mitigation Measure	Alternatives	Implementation	Monitoring	Confirmation/Comment
<i>Visual Resources</i>				
Setback the marine terminals from the northern shore of the Oakland Inner Harbor to mitigate impacts from the visual obstruction of Yerba Buena Island and Mount Tamalpais.	A, C	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Create the public access component of the Vision 2000 Program to mitigate the loss of views from Middle Harbor Park	A, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
<i>Biological Resources</i>				
Consult with USFWS and USACE and conduct studies to assess construction and dredging impacts to least term foraging areas, minimize turbidity in least term foraging habitats, and create least term foraging habitats in the marine habitat enhancement area to mitigate potential loss of foraging habitats.	A, C, D	Responsibility: Port, USFWS, USACE Timing: As a component of the Vision 2000 Program	None required	
Create new eelgrass beds in the marine habitat enhancement area to mitigate the loss of eelgrass beds in the Oakland Inner Harbor.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
<i>Water Resources</i>				
Expand the stormwater pollution prevention program to include the entire site to mitigate impacts to adjacent waters from polluted runoff.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	
Drain all washwater from industrial operations to the sanitary sewer system to mitigate impacts to adjacent waters from polluted runoff.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	
Require tenants to develop spill response plans to mitigate the potential impacts of spills on water quality.	A, B, C, D	Responsibility: Port, Lessee Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	
Require tenants to properly train and equip employees to respond to spills that could enter the storm drain system.	A, B, C, D	Responsibility: Port, Lessee Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	
Require tenants to store all drums indoors or in properly contained areas to mitigate the impact of leaking drums on water quality.	A, B, C, D	Responsibility: Port, Lessee Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by the implemented SWPP	

ATTACHMENT 1 (cont'd):
Port of Oakland Vision 2000 Program Final EIR Mitigation Monitoring Program Checklist

Mitigation Measure	Alternatives	Implementation	Monitoring	Confirmation/Comment
<i>Water Resources (cont'd)</i>				
Evaluate the availability of land for grassy swales or other vegetative-type controls to allow stormwater to infiltrate into the ground to mitigate impacts to adjacent waters from polluted runoff.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	<i>Responsibility:</i> Port <i>Timing:</i> As determined by the implemented SWPPP	
Use special equipment and evaluate and adopt special precautions and measures to mitigate impacts from releasing contaminated materials into the water column during dredging.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	<i>Responsibility:</i> Port <i>Timing:</i> Throughout the dredging process	
Prioritize material not suited for unconfined aquatic disposal so that construction reuse would be the first priority, followed by landfill disposal, and then confined aquatic disposal to mitigate impacts to water quality from disposal or reuse of contaminated dredged material.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	<i>Responsibility:</i> Port <i>Timing:</i> Throughout the dredging process	
Evaluate and adopt special precautions and measures prior to filling the Oakland Middle Harbor and select and implement the appropriate methods and technologies for filling suitable to site-specific conditions and in accordance with future permit requirements to mitigate impacts to water quality from filling.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	<i>Responsibility:</i> Port <i>Timing:</i> Throughout the filling process	
<i>Geology and Soils</i>				
Use design features for dikes and fills that reduce the potential for slope or ground failure to mitigate damage to new structures, roads, and utilities from earthquakes. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	None required	
Design new structures and facilities using the results of geotechnical studies to prevent injuries and loss of life, prevent environmental damage, maintain emergency services, and minimize construction and replacement cost to mitigate impacts from earthquakes. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	None required	
Design and locate facilities used for storing or handling hazardous materials to minimize impacts from releases during an earthquake. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	None required	
Incorporate the recommendations of a geotechnical engineer when designing and locating facilities to mitigate impacts to shoreline slopes, foundations, structures, and utilities from liquefaction. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	None required	

**ATTACHMENT 1 (cont'd):
Port of Oakland Vision 2000 Program Final EIR Mitigation Monitoring Program Checklist**

Mitigation Measure	Alternatives	Implementation	Monitoring	Confirmation/Comment
<i>Geology and Soils (cont'd)</i>				
Evaluate in geotechnical studies of the site the potential for settlement of fills to mitigate any impacts from settlement. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
Maintain original elevations of the filled habitat area despite any settlement to mitigate impacts to habitat changes from settlement. Periodically evaluate the habitat to determine whether settlement changes are adverse, beneficial, or neutral with respect to the long-term objectives of the habitat and take corrective action as needed.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: As determined by geotechnical engineer	
Incorporate the recommendations of a geotechnical engineer when designing and locating facilities to mitigate impacts to foundations, structural supports, and horizontal features from differential settlement. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	None required	
<i>Traffic</i>				
Restripe the east and westbound 3 rd Street approaches to Middle Harbor Road, converting the combination left/through lanes to left turn only to mitigate impacts to traffic congestion at the intersection of 3 rd Street and Adeline.	A, B, C, D	Responsibility: City of Oakland Timing: As a component of the Vision 2000 Program	None required	
<i>Air Quality</i>				
There is no feasible measure to mitigate impacts to air quality from increased transportation activity.	A, B, C, D	N/A	N/A	N/A
Implement dust control measures to mitigate impact to air quality from dust and PM ₁₀ emissions during construction and demolition activity.	A, B, C, D	Responsibility: Port Timing: As a component of the Vision 2000 Program	Responsibility: Port Timing: Throughout construction phase	
<i>Noise</i>				
No impacts, no mitigation measures required.	N/A	N/A	N/A	N/A
<i>Utilities</i>				
No impacts, no mitigation measures required.	N/A	N/A	N/A	N/A

ATTACHMENT 1 (cont'd):
Port of Oakland Vision 2000 Program Final EIR Mitigation Monitoring Program Checklist

Mitigation Measure	Alternatives	Implementation	Monitoring	Confirmation/Comment
<i>Hazardous Materials and Waste</i>				
Investigate and identify the extent of PCB-containing equipment at unsurveyed portions of the project site. Ensure compliance with applicable local, state, and federal regulations regarding the management and proper disposal of any identified PCB-containing equipment or PCB contamination. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	None required	
Investigate and identify the location of USTs and ASTs at unsurveyed portions of the project site. Ensure compliance with applicable local, state, and federal regulations regarding the removal and management of any identified tanks. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	None required	
Investigate and identify the location of OWSs and waste impoundments at unsurveyed portions of the project site. Ensure compliance with applicable local, state, and federal regulations regarding OWS and waste impoundment management. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	None required	
Investigate and identify the location of all historic industrial operations and structures at the project site. Ensure compliance with applicable local, state, and federal regulations regarding the management of hazardous materials and waste caused by historic land use. Specific mitigation measures will be identified as part of future, project-level environmental documentation.	A, B, C, D	<i>Responsibility:</i> Port <i>Timing:</i> As a component of the Vision 2000 Program	None required	

Alternatives:

- A: Maximum Marine Terminal/ Maximum Rail Terminal Alternative
 B: Minimum Marine Terminal/Minimum Rail Terminal Alternative
 C: Maximum Marine Terminal/Minimum Rail Terminal Alternative
 D: Reduced Harbor Fill Alternative

ATTACHMENT 2: VERIFICATION REPORT

Date: _____ Arrival Time: _____ Departure Time: _____

Location: _____ Discipline: _____
 _____ ☐ History ☐ Transportation Planning
 _____ ☐ Civil Engineering ☐ Environmental Planning
 _____ ☐ Environmental Science

Construction Sheet Number: _____

Condition: _____

Compliance: ☐ Acceptable ☐ Unacceptable ☐ Delay Activity
☐ Remedial Action Implemented
☐ Work Stop
☐ Follow-up Conference Required

Activity: _____

Observations: _____

Recommendations: _____

By: _____ Report Approval: _____

Receipt by Project Supervisor:

Signature: _____ Date: _____ Time: _____

Comments/Actions: _____

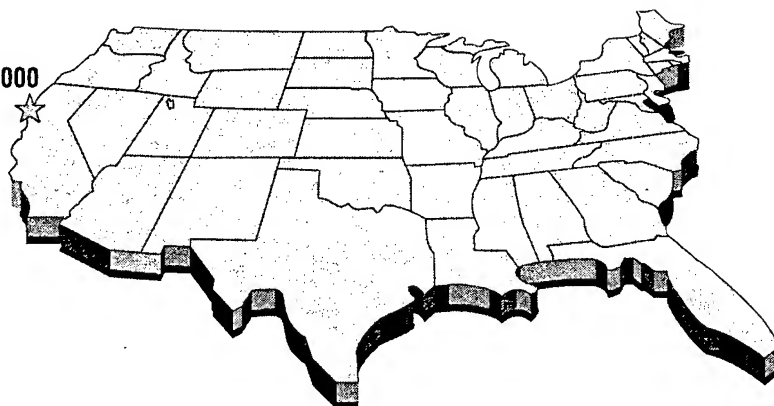
Copies to: _____

Date Entered to Environmental Monitoring File: _____

By: _____

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FISCO/Vision 2000



APPENDIX N AIR QUALITY MODELING

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Appendix N

Air Quality Modeling

N.1. Introduction

Technical discussion of air pollution issues requires an understanding of terms that have a technical meaning. It is especially important to understand the distinction between air pollutant emissions and ambient air quality. The term "pollutant emissions" refers to the amount (usually stated as a weight) of one or more specific compounds introduced into the atmosphere by a source or group of sources.

In practice, most pollutant emissions data are presented as "emission rates": the amount of pollutants emitted during a specified increment of time or during a specified increment of emission source activity. Typical measurement units for emission rates on a time basis include pounds per hour, pounds per day, or tons per year. Typical measurement units for emission rates on a source activity basis include pounds per thousand gallons of fuel burned, pounds per ton of material processed, and grams per vehicle mile of travel.

The term "ambient air quality" refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) actually experienced at a particular geographic location that may be some distance from the source of the relevant pollutant emissions. The ambient air quality levels actually measured at a particular location are determined by the interactions among three groups of factors:

- emissions: the types, amounts, and locations of pollutants emitted into the atmosphere;
- meteorology: the physical processes affecting the distribution, dilution, and removal of these pollutants; and
- chemistry: any chemical reactions that transform pollutant emissions into other chemical substances.

Ambient air quality data are generally reported as a mass per unit volume (e.g., micrograms per cubic meter of air) or as a volume fraction (e.g., parts per million by volume).

Air pollutants are often characterized as being "primary" or "secondary" pollutants. Primary pollutants are those emitted directly into the atmosphere (such as carbon monoxide, sulfur dioxide, lead particulates, and hydrogen sulfide). Secondary pollutants are those (such as ozone, nitrogen dioxide, and sulfate particles) formed through chemical reactions in the atmosphere; these chemical reactions usually involve primary pollutants, normal constituents of the atmosphere, and other secondary pollutants.

Those compounds which react to form secondary pollutants are often referred to as reactive pollutants, pollutant precursors, or precursor emission products. Some air pollutants (such as many organic gases and suspended particulate matter) are a combination of primary and secondary pollutants.

The distinction between primary and secondary pollutants is more than a matter of semantics; important air quality management implications are also involved. The ambient concentration of primary pollutants depends on the spatial concentration of the emission sources, the rate of pollutant emissions, and the degree to which the emitted pollutants are dispersed or removed from the atmosphere between the emission source and the location of interest.

Air quality problems involving primary pollutants (such as carbon monoxide) can usually be traced to a single pollutant source or a concentrated group of sources emitting large quantities of the pollutant. Additionally, the responsible emission source will usually be relatively close to the location of the air quality problem. The distance between the emission source and the location of a ground-level air quality problem depends largely on the height at which the emissions are released into the atmosphere.

When an air quality problem involves a secondary pollutant (such as ozone), the spatial relationship between emission sources and ambient air quality problems becomes much more complicated. Because secondary pollutants are not emitted directly into the atmosphere, observed ambient concentrations may not show a clear correlation with the spatial distribution of sources emitting the pollutant precursors. The time factor involved in the chemical reactions producing secondary pollutants allows emissions from numerous sources to become dispersed and mixed together. As a result, the observed ambient pollutant concentrations are due as much to the cumulative areawide emissions of precursors as to the spatial concentration of emission sources.

Two types of air quality analyses have been used in this EIS/EIR to quantify potential air quality impacts: dispersion modeling analyses to evaluate potential carbon monoxide concentrations, and emissions estimates to evaluate the significance of other pollutant emissions from vehicle traffic, locomotives, and cargo ships. Dispersion modeling and emission estimates for vehicle traffic both depend on the use of vehicle emission rates derived from the EMFAC7F vehicle emission rate model. However, emission rates for use in a dispersion modeling analysis are generated using different assumptions than those used for estimating regional emission quantities.

Emission rates for dispersion modeling analyses represent point estimates of vehicle operating conditions, while those used for ozone precursor evaluations reflect

cumulative patterns of vehicle conditions over an entire trip. The following sections discuss the specific procedures used for the dispersion modeling and ozone precursor analyses.

N.2. Carbon Monoxide Dispersion Modeling Procedures

Predicting the ambient air quality impacts of pollutant emissions requires consideration of the transport, dispersion, chemical transformation, and removal processes which affect pollutant emissions after their release from a source. Gaussian dispersion models are frequently used for such analyses. The term "gaussian dispersion" refers to a general type of mathematical equation used to describe the horizontal and vertical distribution of pollutants downwind from an emission source.

Gaussian dispersion models treat pollutant emissions as being carried downwind in a defined plume, subject to horizontal and vertical mixing with the surrounding atmosphere. The plume spreads horizontally and vertically with a reduction in pollutant concentrations as it travels downwind. Mixing with the surrounding atmosphere is greatest at the edge of the plume, resulting in lower pollutant concentrations outward (horizontally and vertically) from the center of the plume. This decrease in concentration outward from the center of the plume is treated as following a gaussian ("normal") statistical distribution. Horizontal and vertical mixing generally occur at different rates. Because turbulent motions in the atmosphere occur on a variety of spatial and time scales, vertical and horizontal mixing also vary with distance downwind from the emission source.

Dispersion models calculate pollutant concentrations at particular locations ("receptors" in modeling jargon) by applying appropriate horizontal and vertical dispersion factor equations to the initial pollutant concentration. The proper dispersion factor equations are determined from the spatial position of the receptor relative to the emission source location and the centerline of the pollutant plume extending downwind from the emission source.

When more than one emission source affects a particular receptor location, the total pollutant concentration at the receptor is the sum to the individual pollutant increments contributed by each emission source.

The reference to "pollution plumes" implies an analogy to physically mixing fluids (air in this case) with different pollutant concentrations. That would seem to suggest that the pollution concentration at a given location would be the average, not the sum, of the incremental concentrations from each overlapping plume. Despite the use of "pollution plume" terminology, the fluid mixing analogy is inappropriate in the context of atmospheric dispersion models.

The flaw in the fluid mixing analogy involves the total volume of fluid present as additional emission source contributions are added. The volume of "carrier fluid" (air) at a receptor point remains constant regardless of the number of overlapping pollution plumes affecting the site.

The faulty fluid mixing analogy can be visualized as pouring buckets of water with different salt concentrations into an empty swimming pool. The resulting pollutant (salt) concentration is the weighted average of the concentrations in the incremental

additions of salty water. The actual situation with atmospheric dispersion modeling is more like pouring different sized jars of salt into a swimming pool already filled with water. The resulting pollutant (salt) concentration is the sum of the effects of the incremental additions of salt.

In more technical terms, atmospheric dispersion models operate by simulating the spatial distribution of pollutant molecules, rather than simulating the mixing of fluids per se. The pollution plume terminology that leads to confusion is, however, too thoroughly ingrained in the modeling literature to change.

Dispersion modeling analyses for this EIS/EIR used the CALINE4 dispersion model and vehicle emission rates derived from the California Air Resources Board's EMFAC7F vehicle emission rate model.

N.2.1. The CALINE4 Model

CALINE4 (Benson, 1989) is a gaussian dispersion model developed by the California Department of Transportation to evaluate ambient air quality conditions near highways. Modeled highway links are analyzed in the model as a sequence of short segments. Each segment of a highway link is treated as a separate emission source producing a plume of pollutants which disperses downwind. Pollutant concentrations at any specific location are calculated as the total contribution from overlapping pollution plumes originating from the sequence of roadway segments.

The CALINE4 model employs a "mixing cell" approach to estimating pollutant concentrations over the roadway itself. Vertical dispersion of pollutants above the roadway is assumed to be dominated by mechanical turbulence from moving vehicles and convective mixing due to the temperature of vehicle exhaust gases. In this situation, the vertical limit of mixing (i.e., the height of the mixing cell) becomes a function of pollutant residence time within the mixing cell. Residence time depends on mixing cell width, wind angle relative to the mixing cell, and wind speed. The width of the mixing cell over each roadway segment is based on the width of the traffic lanes of the highway plus an additional vehicle-induced turbulence zone on either side. Parking lanes and roadway shoulders are not counted as traffic lanes.

The CALINE4 model computes an initial vertical dispersion parameter to characterize the vertical profile of pollutant concentrations over the roadway. Pollutant concentrations downwind from the mixing cell are then calculated using horizontal and vertical dispersion rates which are a function of various meteorological and ground surface conditions.

When winds are essentially parallel to a highway link, pollution plumes from all roadway segments overlap. This produces high concentrations near the roadway (near the center of the overlapping pollution plumes), and low concentrations well away from the highway (at the edges of the overlapping pollution plumes). When winds are at an angle to the highway link, pollution plumes from distant roadway segments make essentially no contribution to the pollution concentration observed at a receptor location. Under such cross-wind situations, pollutant concentrations near the highway are lower than under parallel wind conditions (fewer overlapping plume contributions), while pollutant concentrations away from the highway may be greater than would occur with parallel winds (near the center of at least some pollution plumes).

The CALINE4 model was originally released in 1984. Minor program revisions were made in 1988 and 1989. One of the program revisions made in 1989 introduced an altitude-based air pressure correction factor into the equation that converts air quality units from micrograms per cubic meter to parts per million by volume. By definition, such unit conversions should be done for 25 degrees Celsius and 1 atmosphere pressure (for proper comparison to federal and state ambient air quality standards). Actual ambient monitoring data must be corrected for temperature and pressure effects of actual ambient temperature and pressure. But the reverse procedure of adjusting modeling results to study area ambient temperature and air pressure should not be used.

The CALINE4 source code used for this EIS/EIR was reprogrammed to ignore study area altitude and air temperature, and to perform the correct unit conversion calculations. The CALINE4 source code was also modified to increase the number of roadway links and receptors that could be modeled in a single run, and to generate a summary table with the total carbon monoxide concentration at each receptor under each meteorological scenario.

All CALINE4 modeling conducted for this EIS/EIR used the model in the standard link run mode. Excess idling emissions at congested intersections were addressed through a simple emission rate adjustment procedure (Sculley 1989). The intersection link option in CALINE4 was not used.

N.2.1.1. Roadway and Traffic Conditions

The highway network modeled for this EIS/EIR included:

- I-80 from the Bay Bridge through the 80/580/880 distribution structure;
- I-580 between I-80 and I-980;
- I-880 from east of I-980 to I-80;
- I-980 from I-880 to I-580;
- Maritime Street;
- 7th Street and the 7th Street extension to Maritime Street;
- Middle Harbor Road;
- West Grand Avenue from Peralta Street to I-80;
- the new frontage road east of I-880, south of West Grand Avenue; and
- short sections of Adeline Street and Union Street at the ramps to I-880.

Roadway coordinates were scaled from available highway maps. Most roadways were modeled as multiple link segments to reflect changes in roadway alignment and traffic volumes. The overall roadway network was modeled as a system of 51 roadway links.

Surface streets were modeled as at-grade roadways. Most of the freeway links were modeled as bridge links, with relative elevations ranging from 5 feet to 60 feet (CH2M Hill 1990). Most mixing zone widths were based on a 5-foot turbulence zone on each side of the roadway, 12-foot lane widths for surface streets, and 15-foot lane widths (to account for center median widths) for the freeways.

Modeled traffic volumes were based on 2010 afternoon peak hour conditions for the No Action Alternative and the Maximum Marine/Maximum Rail, Minimum Marine/Minimum Rail, Maximum Marine/Minimum Rail, and Reduced Fill reuse alternatives. Modeled roadways were treated in a non-directional manner; traffic volumes and speeds in both directions were assigned to a single link. Surface street and freeway volumes were taken from link volume tables generated during traffic modeling studies conducted by Dowling Associates.

Table N-1 summarizes the roadway network used for the CALINE4 modeling analysis.

N.2.1.2. Receptor Locations

Carbon monoxide concentrations were calculated for 26 receptor locations to cover five roadway intersections and six park sites (as part of the 4(f) evaluation). Four receptors were used around each of the five intersections: Maritime Street and Burma Road; Maritime Street and 7th Street Extension; 7th Street and I-880; Adeline Street and 3rd Street; and Adeline Street and I-880. The modeled park site locations included: Port View Park, Middle Harbor Park, Ernie Raimondi Field, Willow Mini Park, Bertha Port Playground, and Chester Street Playground.

Intersection receptor coordinates represent locations 65 feet from the centerlines of the adjacent roadways, except at Maritime Street and Burma Road where a 75-foot distance was used. Receptor coordinates were calculated from roadway link coordinates using a coordinate geometry spreadsheet. All receptor heights were set at five feet.

Table N-2 presents the receptor coordinates used for the CALINE4 modeling.

N.2.1.3. Meteorological and Surface Roughness

All CALINE4 runs assumed a wind speed of 1.0 meters per second (2.2 mph), stable atmospheric conditions (stability class E and a horizontal wind direction fluctuation parameter of 10 degrees), and a mixing height limit of 50 meters (164 feet). Wind directions were varied in 10 degree increments to identify the situation producing the highest total pollutant concentration at each receptor location.

The CALINE4 model was run using an averaging time of 60 minutes and a surface roughness factor of 75 centimeters. No settling or deposition velocities were used. A scale factor of 0.3048 was used to convert link and receptor coordinate units from feet to meters.

N.2.1.4. Background Concentrations

Background pollutant concentrations represent the increment of pollution levels contributed by emission sources that are not included directly in the modeling analysis. The major contributors to background carbon monoxide levels are

unmodeled surface streets and parking lots. A peak hour background concentration of 4 ppm was manually added to the modeling results for each receptor location.

N.2.1.5. 8-Hour Average Carbon Monoxide Concentrations

Potential 8-hour average carbon monoxide levels were estimated by applying a persistence factor of 79% to the maximum 1-hour carbon monoxide levels (modeled increment plus background) for each receptor location. This persistence factor was derived from the ratio of peak 8-hour versus peak 1-hour carbon monoxide concentrations reported from the Alice Street monitoring station in recent years.

N.2.2. Vehicle Emission Rates

The EMFAC7F vehicle emission rate program (California Air Resources Board 1992, 1993, 1993a, 1993b) was used to estimate carbon monoxide emission rates for vehicles operating on roadways in the study area. EMFAC7F determines vehicle emission rates based on a wide range of factors: pollutants of interest; calendar year; air temperature; mix of vehicle types; average route speed; age distribution of vehicles by type; average annual mileage accumulations by vehicle age and type; basic exhaust emission rates for new vehicles by vehicle type and model year; deterioration rates for exhaust emissions by vehicle type and accumulated mileage; and the effectiveness of vehicle inspection and maintenance programs.

EMFAC7F is designed primarily for use in generating regional and statewide emission inventories rather than roadway segment emission rates used for dispersion models. In addition, the model is structured to use default values for most input parameters. Consequently, standardized EMFAC7F output files provided by the California Air Resources Board (CARB) were placed into a spreadsheet model that performs appropriate unit conversions and composite weightings while allowing the user to vary key parameters of interest. Lookup table data in the spreadsheet version of EMFAC7F are based on 5 mph speed increments and 10 degree temperature increments. Key input data and assumptions used for the dispersion modeling analysis are discussed below.

N.2.2.1. Calendar Years

Average vehicle emission rates depend on the types and condition of vehicles operating in the area of concern. State and federal motor vehicle emission control programs are resulting in a continuing reduction in average emission rates for most types of vehicles. Average emission rates will change in the future as vehicles manufactured without sophisticated emission control systems are replaced by newer vehicles with more extensive emission control systems. Air quality analyses involving highway traffic conditions must therefore reflect vehicle emission rates for an appropriate calendar year.

The EMFAC7F program includes emission rates for calendar years from 1980 to 2020. Emission rates used for this analysis were for 2010.

N.2.2.2. Air Temperature

Vehicle emission rates for carbon monoxide vary with ambient air temperature, generally being higher at lower temperatures. Carbon monoxide problems are primarily a winter phenomenon, and tend to occur most often in the late afternoon and evening hours. A typical winter season late afternoon air temperature of 50 degrees Fahrenheit was used for all emission rates.

N.2.2.3. Vehicle Mixes

The EMFAC7F model contains emission rate data for several categories of vehicles, with distinctions based primarily on vehicle weight and fuel type. Different vehicle mixes were used for surface streets and freeways included in the dispersion modeling analysis. The vehicle mixes were generated by a spreadsheet model that adjusts regional vehicle registration data for alternative heavy truck fractions.

Because the modeled surface streets are important truck routes, the surface street vehicle mix was 52.67% autos, 16.71% light trucks/vans, 1.70% medium trucks/vans, 2.56% gasoline-fueled heavy trucks, 25.62% diesel-fueled heavy trucks, and 0.74% motorcycles. The freeway vehicle mix was 64.26% autos, 20.39% light trucks/vans, 2.08% medium trucks/vans, 2.58% gasoline-fueled heavy trucks, 9.79% diesel-fueled heavy trucks, and 0.90% motorcycles. The spreadsheet version of EMFAC7F uses CARB default factors to split the light and medium duty vehicle types into catalyst-equipped, noncatalyst, and diesel-fueled subtypes.

N.2.2.4. Vehicle Operating Modes

The EMFAC7F program recognizes three operating mode conditions for gasoline-fueled passenger vehicles. These operating modes (cold start, hot start, and hot stabilized) are a function of four factors: how long a vehicle's engine has been on; how long the vehicle was parked before the engine was started; the operating mode condition of the vehicle at the time it was previously parked; and whether the vehicle has a catalytic converter. Vehicles operating in a cold start mode have significantly higher emission rates than those operating in hot start or hot stabilized modes.

Vehicle operating mode definitions reflect the conditions of standardized test procedures used to certify that new vehicles meet applicable federal and state emission standards. By definition, the hot stabilized mode represents all vehicle operations occurring after the engine has been on for 505 seconds. The first 505 seconds of vehicle operation will be in either a cold start or a hot start mode. Cold start and hot start operating modes are distinguished by three factors: the operating mode condition of the vehicle when parked; the duration of parking preceding vehicle start-up; and the presence or absence of a catalytic converter.

Vehicles with a catalytic converter will resume operations in a cold start mode after the engine has been off for 1 hour or more. Vehicles without a catalytic converter resume operations in a cold start mode after the engine has been off for 4 hours or more. Any vehicle which is still in a cold start mode when parked will resume operations in a cold start mode regardless of the parking duration.

If a catalyst-equipped vehicle is parked for less than 1 hour, it will resume operations in a hot start mode (unless the vehicle was still in a cold start mode when it parked). If a noncatalyst vehicle is parked for a period of less than 4 hours, it will resume operations in a hot start mode.

Parking duration patterns vary by trip purpose. Work trips often begin in a cold start mode and end with a long parking duration. Shopping trips are more likely to begin in a hot start mode and end with a short or intermediate parking duration. Typical cold start and hot start patterns by trip type have been developed by the

California Department of Transportation (Caltrans) using data from statewide travel pattern surveys (California Department of Transportation 1981).

Vehicle emission rates used in a dispersion modeling analysis should reflect a point estimate of the fraction of vehicles operating in start mode conditions along various roadway segments. This can be calculated by estimating two components of the traffic flow for relevant roadway segments: the mix of trip purposes for the time period being modeled, and the fraction of vehicles that will have been in operation for more than 8.4 minutes (505 seconds). The Caltrans start mode fractions can then be applied to derive cold start and hot start fractions.

A simple spreadsheet model was used to perform the operating mode calculations for surface street and freeway traffic. Table N-3 shows the operating mode calculations for surface street traffic, and Table N-4 shows the calculations for freeway traffic. EMFAC7F emission rates were calculated using the weighted average operating mode fractions.

N.2.2.5. Vehicle Speeds

Emission rates used in the dispersion modeling analysis were calculated for various average traffic speed conditions. Afternoon peak hour traffic speeds assumed for the various roadway links are shown in Table N-1. Speeds of 25 or 35 mph were assumed for most freeway segments. Speeds of 10, 15, or 25 mph were assumed for most surface street segments.

N.2.2.6. Excess Idling Emissions

The equations used in the vehicle emission rate models incorporate coefficients representing speed-dependent patterns of vehicle idling, acceleration, cruising, and deceleration. The resulting vehicle emission rates do not represent a constant speed cruise condition. Instead, they represent a pattern of speed changes representing an overall average route speed. The amount of idling time inherent in the emission rate models increases from about 2 percent of travel time at 55 mph to 10 percent at 30 mph and to 48 percent at 5 mph (Smith and Aldrich 1977; Sculley 1989). This inherent pattern adequately accounts for congestion-related idling on most roadways that do not experience significant congestion or signalization delays.

The amount of vehicle idling occurring at congested or signalized intersections can exceed the amount of idling inherent in the vehicle emission rate models, even if low intersection approach speeds are assumed. To more adequately account for the amount of idling at congested intersections, special adjustments were made to the basic EMFAC7F emission rates for roadway links at congested intersections.

The basic idle adjustment procedure uses the length of a modeled roadway link and the assumed average vehicle speed to determine the amount of idling time inherent in the associated EMFAC7F emission rate. This idling time value can then be compared to an estimate of expected actual delay time per vehicle (based on intersection delay analyses, level-of-service estimates, or signal cycle times). If the expected actual delay per vehicle exceeds the idling time accounted for in the vehicle emission rates, an excess idling emission rate increment can be calculated and added to the basic EMFAC7F rate.

Traffic modeling studies by Dowling Associates provided an estimate of vehicle delay times for major intersections and freeway ramp areas. Table N-1 shows the delay time per vehicle assumed for each of the modeled roadway links.

The EMFAC7F model does not provide a direct calculation of idling emission rates, but idling rates can be estimated from emission rates at low average speeds. The conventional approach for estimating hot stabilized idling emission rates is to convert a 5-mph, 100% hot stabilized emission rate into a time-based rate (grams of pollutant per minute). Because of the internal structure of the EMFAC7F model, it is also necessary to calculate a cold start correction factor from 100% stabilized mode and 100% cold start mode emission rates at a speed of 16 mph.

Table N-5 shows the idling delay adjustments used for freeway links under the No Action scenario. Table N-6 shows the freeway link idling adjustments used all four of the Vision 2000 plan alternatives (Alternatives A, B, C, and D). Tables M-7 through M-11 summarize the idling delay adjustments used for surface street emission rates under the No Action Alternative and the four Vision 2000 plan alternatives.

N.3. Motor Vehicle Emission Estimates

Ozone and carbon monoxide are the pollutants most strongly correlated with motor vehicle emissions. Carbon monoxide is a direct emission product resulting from fuel combustion. Ozone is not emitted directly to the atmosphere, but is formed from complex chemical reactions in the atmosphere in the presence of sunlight. The directly emitted pollutants which produce ozone through photochemical reactions fall into two groups: reactive organic compounds and nitrogen oxides. Motor vehicle emissions are a major source of both pollutant groups.

Air pollutant emissions associated with vehicle travel under the alternative reuse plans were estimated by combining appropriate vehicle emission rates and travel pattern estimates. Travel pattern estimates were developed to reflect typical trip patterns for average weekday conditions. Traffic studies conducted EIS/EIR were used as the starting point for the trip generation and travel pattern analysis.

Vehicle emission rates were calculated using the EMFAC7F vehicle emission rate model. As noted previously, the approach used to generate appropriate vehicle emission rates for an ozone precursor analysis differs somewhat from the approach used for carbon monoxide dispersion modeling. Because vehicle emission rates are nonlinear functions of speed and operating mode conditions, using single "daily average" values for key parameters can introduce significant errors into the emission estimates. A better approach is to develop distribution patterns that reflect vehicle operating conditions and speeds over an entire day.

Trip generation for each land use category was disaggregated into trip purpose components. Travel time distributions were estimated for each trip purpose category. The travel time distributions provided a mean travel time and a mean vehicle operating mode pattern. The mean travel time was then combined with a speed distribution pattern to compute appropriate weighted average travel distances and emission rates for each trip purpose. The travel distances and emission rates were then combined to produce estimated vehicle emissions for trips associated with each land use category for a particular reuse scenario.

Major steps in the analysis procedure are discussed below. Tabular summaries for most of the major steps are presented at the end of the discussion.

N.3.1. Trip Generation

Trip generation estimates presented in the EIS/EIR were developed separately for auto traffic and truck traffic, based on data provided by Jordan Woodman Dobson (for maritime facilities) and Nolte and Associates (for rail facilities). Vehicle trip estimates for employee traffic are consistent with standard trip rates for light industrial land uses (Institute of Transportation Engineering, 1991). Truck trip estimates were developed primarily from estimates of ship cargo movements and the options for rail versus truck transport of these cargoes.

N.3.2. Travel Patterns

Travel pattern estimates were developed from two components: estimated travel time distributions for various trip types, and estimated vehicle speed distributions for the same trip types. The travel time and vehicle speed distributions represent professional judgment based on regional land use patterns, regional transportation systems, existing employee residency pattern data, previous analyses of travel patterns as represented by various regional traffic models, and previous analyses of data from regional and statewide travel pattern surveys.

Table N-12 presents the trip duration patterns used for the analysis of auto trips. A limited amount of comparison information is available from travel survey data collected by federal, state, and regional agencies. Data from the 1980 census give an average home-work commute trip duration of 26 minutes for the San Francisco/Oakland (US Federal Highway Administration 1985). More recent Caltrans data also show a similar average commute trip duration (25 minutes) for the Bay Area (California Department of Transportation, 1992). The travel time distribution pattern for home-work commute trips has an average travel time (24.75 minutes) close to the Caltrans and Census estimates. Travel time distribution patterns for other trip purposes are based primarily on professional judgment.

Employee residency surveys conducted in 1993 indicate an average commute distance of about 18 miles for Port and FISCO employees (Table N-13). More limited employee travel surveys conducted for the Port of Oakland in 1995 show that more than half of the employees report a commute distance of more than 10 miles, with nearly 8% reporting a commute distance of 30 miles or more.

Truck origin destination pattern data for the Port of Oakland indicate that 71% of the Port-related truck trips begin and end in the San Francisco Bay Area, with the remaining 29% traveling to or from other parts of California or other states (N-14).

The travel distance data in Tables M-13 and M-14 were used to adjust travel time and travel speed pattern assumptions so as to generate realistic travel distance values.

N.3.3. Vehicle Emission Rates

A general discussion of the EMFAC7F vehicle emission rate model was presented in the discussion of carbon monoxide dispersion modeling procedures. The nature of ozone precursor emissions analysis procedures requires that EMFAC7F emission rates be based on:

- daily, rather than peak hour, patterns of vehicle activity;
- land use-generated vehicle trips (by trip purpose categories), rather than total traffic on particular types of roadways; and
- summer temperature patterns, rather than winter patterns.

In addition to computing the proper weighted average emission rates from EMFAC7F output files, the spreadsheet version of EMFAC7F included complete calculations of diurnal and multiday diurnal evaporative emissions. These calculations are normally performed by a separate computer model (BURDEN7F) when CARB prepares emission inventories.

Table N-15 summarizes emission rates for reactive organic compounds and nitrogen oxides. Table N-16 summarizes emission rates for PM₁₀ and carbon monoxide. Key input data and assumptions used for the vehicle emissions analysis are discussed below.

N.3.3.1. Calendar Years

Emission rates used for this analysis represent expected vehicle mixes for 2010.

N.3.3.2. Air Temperature

Exhaust emission rates were calculated for a mean summer day air temperature of 70 degrees Fahrenheit. Winter carbon monoxide exhaust emission rates were also calculated, using an air temperature of 50 degrees Fahrenheit. Evaporative emissions were calculated for a summer day temperature profile that varied from a low of 55 degrees Fahrenheit to a high of 80 degrees Fahrenheit. Intermediate temperatures used for computing diurnal emissions were: 58 degrees at 8 a.m., 61 degrees at 9 a.m., 71 degrees at 11 a.m., and 76 degrees at 1 p.m.

N.3.3.3. Vehicle Mixes

Separate vehicle type mixes were used for port-related auto traffic (mostly employees) and port-related truck traffic. The auto traffic vehicle mix included 73.33% autos, 23.27% light trucks/vans, 2.37% medium trucks/vans, 0% gasoline-fueled heavy duty trucks, 0% diesel-fueled heavy duty trucks, and 1.03% motorcycles. The truck traffic vehicle mix included 5% gasoline-fueled heavy duty trucks and 95% diesel-fueled heavy duty trucks, with no other vehicle types.

N.3.3.4. Vehicle Operating Modes

Table N-12 included the calculation of daily average vehicle operating mode conditions for the trip purpose categories use in the ozone precursor emissions analysis. The operating mode conditions were computed directly from the trip duration patterns assumed for this analysis.

N.3.3.5. Vehicle Speeds

The speed profiles assumed for each trip purpose category are presented the tables that follow. In general, home-work trips were assumed to have a speed profile that produced an average speed of 45 mph. Work-other trips had an speed profile averaging 40 mph. Other trip types had speed profiles averaging about 35 mph.

N.3.4. Emission Calculations for Autos and Trucks

Emission estimates for vehicle traffic under the various alternatives are presented in the following tables. Tables M-12 through M-16 provide data used for all alternatives. Tables M-17 through M-22 provide the analysis for the No Action Alternative. Tables M-23 through M-28 provide the analysis for the Maximum Marine/Maximum Rail Alternative (referred to as Alternative A). Tables M-29 through M-34 provide the analysis for the Minimum Marine/Minimum Rail Alternative (referred to as Alternative B). Tables M-35 through M-40 provide the analysis for the Maximum Marine/Minimum Rail Alternative (referred to as Alternative C). Tables M-41 through M-46 provide the analysis for the Reduced Harbor Fill Alternative (referred to as Alternative D).

The primary emission calculation process was based on estimates of average daily vehicle trip patterns. Annual emission estimates were derived by assuming 250 working days per year.

N.4. Locomotive Emission Estimates

Emission estimates for rail traffic associated with the Port of Oakland have been based on data developed primarily for use in traffic impact analyses.

N.4.1. Train Categories and Sizes

Table N-47 summarizes the characteristics of various trains potentially using rail segments through the Bay Area. Amtrak trains pass through the West Oakland rail yard, and use portions of the rail yard for assembly and maintenance of trains. Local and long-haul freights pass through the West Oakland yard, with some trains originating from the yard. In general, 6,000-foot freights are the longest trains assembled at the West Oakland yard.

N.4.2. Major Rail Routes

The rail traffic data used for this analysis was developed with a focus on northwestern Alameda and western Contra Costa Counties. Rail traffic projections were made for the main rail lines north and south of the West Oakland railyard. These projections, however, did not identify ultimate destinations beyond northern Alameda or western Contra Costa Counties. To fully address emissions from rail operations, it was necessary to extrapolate the rail traffic projections to major rail routes leading out of the Bay Area toward the Sacramento Valley, San Joaquin Valley, and the Monterey Bay/Salinas Valley area. Table N-47 identifies the lengths of various main track segments in the Bay Area.

Rail traffic on the main line north of Oakland was split into Sacramento Valley and San Joaquin Valley components. Freight traffic was evenly split between these two corridors. All long (interstate) Amtrak trains were assigned to the Sacramento Valley corridor. Short (intrastate) Amtrak trains were assigned 60% to the Sacramento Valley and 40% to the San Joaquin Valley corridors.

Rail traffic on the main line south of Oakland was separated into the San Joaquin Valley and South Bay/Salinas corridors. Local freights were split evenly between San Jose area destinations and Monterey/Salinas destinations (Gilroy). All intermodal freights south of Oakland were assigned to the San Joaquin Valley corridor (via Livermore).

Projected 2010 rail traffic estimates (number of trains and gross ton-miles of rail activity) are presented in Tables M-48 (No Action), M-50 (Maximum Marine/Maximum Rail or Alternative A), M-52 (Minimum Marine/Minimum Rail or Alternative B), M-54 (Maximum Marine/Minimum Rail or Alternative C), and M-56 (Reduced Harbor Fill or Alternative D).

N.4.3. Locomotive Emission Rates and Emission Estimates

The number of locomotives used for a train depends on the total gross weight of the train and terrain conditions along the train's route. Emission rates for rail operations can be given in several different format (such as emissions per hour at different throttle settings for individual locomotives, emissions per pound of fuel burned, or emissions per gross ton-mile of train travel). Emission rates given in the EPA emission inventory guidance document (US Environmental Protection Agency, 1992) are standardized on the basis of gross train weight and distance traveled. Emission rates in this ton-mile format account for the use of multiple engines on heavy trains. Table N-47 identifies emission rates applicable to different train types and sizes.

Table N-49 presents annual rail traffic emissions for major rail segments under the No Action Alternative. Table N-51 presents rail traffic emission estimates for the Maximum Marine/Maximum Rail Alternative (Alternative A). Table N-53 presents rail emission estimates for the Minimum Marine/Minimum Rail Alternative (Alternative B). Table N-55 presents rail emission estimates for the Maximum Marine/Minimum Rail Alternative (Alternative C). And Table N-57 presents rail emission estimates for the Reduced Harbor Fill Alternative (Alternative D).

A summary comparison of rail traffic emission for the various alternatives is presented in Table N-58. Also included in Table N-58 is a summary of the net emission increases (compared to the No Action Alternative) for the four reuse plan alternatives.

N.5. Cargo Ship Emission Estimates

The major types of ships using the Port of Oakland include container ships, bulk carriers, and various general cargo ship types. Ship sizes are generally specified either by physical dimensions (length and draft), or by dead weight tons (dwt). Most ships using the Port of Oakland operate with marine diesel engines. A relatively low percentage of cargo ships use steam boilers. While moored at the Port, ships provide their own electrical power and other utilities. Large diesel generators are used for this purpose by most ships. Steam powered ships often switch from heavy bunker fuels to lighter distillate oil fuel for power and utility service while moored.

N.5.1. Ship Call Projections

Table N-59 summarizes the types and sizes of cargo vessels that used the Port of Oakland in 1991 (based on data in California Air Resources Board, 1991). Container ships represented the majority of ship traffic (72%). Bulk carriers represented 17% of the ship traffic, and other cargo vessel types represented 11% of the traffic. Most ships using the Port of Oakland were less than 50 dwt in size.

Average ship sizes are expected to increase in the future, especially for container ships. The sizes of ships that use the Port of Oakland will depend largely on the depth of ship channels serving the Port. Although no specific forecasts of ship sizes

and types have been prepared for the Port of Oakland, the traffic analyses prepared for this EIS/EIR assume that average ship sizes will increase in the future.

Future ship size distributions were estimated by assuming that the percentages of container, bulk carrier, and other cargo vessel traffic will remain the same as at present, but that the size distribution of marine diesel container ships will shift toward larger average sizes. Emission forecasts for 2010 assumed that 10% of diesel container ships would be less than 25 dwt (compared to 28.1% in 1991), 65% would be 25-50 dwt (compared to 58.5% in 1991), 20% would be 50-75 dwt (compared to 10.4% in 1991, and 5% would be 75-100 dwt (compared to 3% in 1991). As noted in Table N-59, most cargo vessels remain moored at the port for 30-36 hours.

N.5.2. Ship Emission Rates and Emission Estimates

Vessel emission rates used for this analysis are summarized in Table N-60. The emission rates come primarily from California Air Resources Board (1991). Emission rates for diesel generators are from US Environmental Protection Agency (1993). Ship transit times and throttle settings for movements into and out of the Port of Oakland are from California Air Resources Board (1991). Potential fuel use rates for various ship types and sizes are presented in Table N-59. Actual average fuel use factors in Table N-60 are from California Air Resources Board (1991) and Port of Long Beach (1986). Each ship visiting the Port of Oakland makes two movements: transit from the ocean to the Port of Oakland, and transit from the Port of Oakland to the ocean.

Table N-61 presents year 2010 emission estimates for the No Action Alternative. Table N-62 presents emission estimates for the Maximum Marine/Maximum Rail Alternative (Alternative A). Table N-63 presents emission estimates for the Minimum Marine/Minimum Rail Alternative (Alternative B). Table N-64 presents emission estimates for the Maximum Marine/Minimum Rail Alternative (Alternative C). Table N-65 presents emission estimates for the Reduced Harbor Fill Alternative (Alternative D). Table N-66 provides a summary comparison of ship emissions for the various alternatives. Also included in Table N-66 is a summary of the net emission increases (compared to the No Action Alternative) for the four reuse plan alternatives.

N.6. References

Benson, P. E. 1989. CALINE4 - A Dispersion Model for Predicting Air Pollutant Concentrations Near Roadways. 1984 Final Report with 1986 and 1989 Revisions. FHWA/CA/TL-84/15. California Department of Transportation. Sacramento, CA.

California Air Resources Board. 1991. Inventory of Air Pollutant Emissions from Marine Vessels. Final Report. Prepared by Booz-Allen & Hamilton, Inc. Mobile Source Division. El Monte, CA.

California Air Resources Board. 1992. BURDEN7C: Methodology for Estimating Emissions from On-road Motor Vehicles. Technical Support Division. Sacramento, CA.

- California Air Resources Board. 1993. Methodology for Estimating Emissions from On-road Motor Vehicles. Volume I: EMFAC7F. Draft. Technical Support Division. Sacramento, CA.
- California Air Resources Board. 1993a. Methodology for Estimating Emissions from On-road Motor Vehicles. Volume II: WEIGHT(E7FWT). Draft. Technical Support Division. Sacramento, CA.
- California Air Resources Board. 1993b. Methodology for Estimating Emissions from On-road Motor Vehicles. Volume III: BURDEN7F. Draft. Technical Support Division. Sacramento, CA.
- California Department of Transportation. 1981. The 1976-1980 Statewide Travel Survey. Division of Transportation Planning. Sacramento, CA.
- California Department of Transportation. 1992. 1991 Statewide Travel Survey: Summary of Findings Office of Traffic Improvement. Sacramento, CA.
- CH2M Hill. 1990. Air Quality Analysis for the Alternative Corridor Study for the Cypress Freeway Replacement Facility. Prepared for DeLeuw Cather & Company and California Department of Transportation.
- Institute of Transportation Engineers. 1991. Trip Generation: an Informational Report. 5th Edition. (Publication No. IR-016C.) Washington, DC.
- Port of Long Beach. 1986. Port Vessel Emissions Model: A Computer Model for Calculating Vessel Air Pollutants. Volume 3: Workbook. Prepared for the US Department of Transportation, Maritime Administration. PB87-127635. National Technical Information Service. Springfield, VA.
- Port of Oakland. 1995. Port of Oakland Harbor Facilities Employee Transportation Survey Results, August 1995. Oakland, CA.
- Port of Oakland. 1995a. Port of Oakland Harbor Facilities 2 Employee Transportation Survey Results, August 1995. Oakland, CA.
- Sculley, R. D. 1989. "Vehicle Emission Rate Analysis for Carbon Monoxide Hot Spot Modeling." JAPCA 39(10):1334-1343.
- Smith, M. and T. Aldrich. 1977. Development of Revised Light-Duty-Vehicle Emission-Average Speed Relationships. (EPA-460/3-77-011.) US Environmental Protection Agency, Office of Mobile Source Air Pollution Control. Ann Arbor, MI.
- US Federal Highway Administration. 1985. Transportation Planning Data for Urbanized Areas Based on the 1980 Census. (DOT-1-85-20). Office of Highway Planning. Washington, DC.
- US Environmental Protection Agency. 1992. Procedures for Emission Inventory Preparation. Volume IV: Mobile Sources. EPA-450/4-81-126d (revised). Office of Mobile Sources. Ann Arbor, MI.

US Environmental Protection Agency. 1993. Compilation of Air Pollutant Emission Factors. Fourth Edition. Volume I: Stationary Point and Area Sources, Supplement F. (AP-42.) Office of Air Quality Planning and Standards. Research Triangle Park, NC.

US Federal Highway Administration. 1991. 1990 Nationwide Personal Transportation Study: Early Results. Office of Highway Information Management. Washington, DC.

WeatherDisc Associates, Inc. 1990. "Local Climatological Data (TD-9648)." World WeatherDisc Version 2.1. Seattle, WA.

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TABLE N-1. ROADWAY NETWORK USED FOR CALINE4 DISPERSION MODELING

LINK SEGMENT COORDINATES										SEGMENT		PM PEAK HOUR VOLUMES										PEAK HR		DELAY TIME PER VEHICLE (SEC)					
ROADWAY	SEGMENT	.....				HEIGHT (feet)	LENGTH (feet)	LANES	NO ACTION	.....				BASE		.....												
		X1	Y1	X2	Y2					ALT A	ALT B	ALT C	ALT D	SPEED	NO ACT	ALT A	ALT B	ALT C	ALT D										
I-580	E OF JUNCTN	8674	9152	9730	9202	40	1057	10	18173	18205	18195	18194	18205	25	45	45	45	45	45	45	45	45	45	45					
	W OF PERALTA	9730	9202	10560	9630	40	933	10	18173	18205	18195	18194	18205	25	45	45	45	45	45	45	45	45	45	45					
	W OF 980	10560	9630	13577	9655	45	3017	10	18173	18205	18195	18194	18205	25	45	45	45	45	45	45	45	45	45	45					
	E OF 980	13577	9655	14809	9605	45	1233	8	15427	15427	15429	15427	15427	25	45	45	45	45	45	45	45	45	45	45					
MARITIME	S OF W GRAND	7543	7593	7291	7166	0	496	4	1535	1515	1615	1577	1512	10	19	19	19	19	19	19	19	19	19	19					
	S OF BURMA RD	7291	7166	6512	5531	0	1811	4	1280	1318	1347	1386	1319	25	10	10	10	10	10	10	10	9	9	9					
	S OF 14TH	6512	5531	5883	4199	0	1473	4	1505	1740	1697	1828	1752	25	20	20	20	22	20	20	20	20	20	20					
	S OF 7TH ST EXT	5883	4199	5632	3696	0	562	4	1137	1372	1329	1460	1384	10	11	14	20	13	14	14	20	13	14	14					
7TH ST	W OF MDL HARBOR	2891	2640	4023	3017	0	1193	4		1532	955	1006	1579	15	5	16	10	21	17										
	E OF MDL HARBOR	4023	3017	4576	3495	0	731	4		1629	1484	1898	1676	25	5	5	5	5	5	5	5	5	5	5					
	W OF MARITIME	4576	3495	5632	3696	0	1075	4	1403	1738	1649	1815	1787	25	5	5	5	5	5	5	5	5	5	5					
	E OF MARITIME	5632	3696	6210	3797	0	587	4	1403	1846	1814	1731	1898	25	5	5	5	5	5	5	5	5	5	5					
MIDDLE HARBOR	7TH ST EXTNSN	5883	4199	6210	3797	0	518	4	407	2375	1062	1469	2454	10	19	14	20	29	15										
	W OF 880 + RAMP	6210	3797	7593	3897	0	1387	4	948	1618	1236	1968	1763	25	5	5	5	5	5	5	5	5	5	5					
	E OF 880 + RAMP	7593	3897	9026	3897	0	1433	4	1204	1507	1505	1524	1570	15	19	18	18	18	19										
	S OF 7TH ST	4023	3017	4727	2263	0	1032	4		625	223	899	690	25	5	5	5	5	5	5	5	5	5	5					
ADELINE	W OF NEW RD	4727	2263	6613	1961	0	1910	4	913	1003	426	1006	1050	25	5	5	5	5	5	5	5	5	5	5					
	E OF NEW RD	6613	1961	8951	1634	0	2361	4	1152	625	1236	1968	690	25	5	5	5	5	5	5	5	5	5	5					
	EDGE OF RR YARD	8951	1634	10962	2816	0	2333	4	1612	1749	1628	1877	1786	15	19	32	32	46	36										
	S OF 3RD	10962	2816	11088	3193	0	398	4	1612	1749	1628	1877	1786	10	38	64	64	92	72										
ADELINE	S OF 880 + RAMP	11088	3193	11088	3696	0	503	4	1321	1374	1338	1414	1382	25	5	5	5	5	5	5	5	5	5	5					
	N OF 880 + RAMP	11088	3696	11088	4174	0	478	4	1446	1583	1462	1711	1620	10	20	30	21	22	31										

TABLE N-1. ROADWAY NETWORK USED FOR CALINE4 DISPERSION MODELING

ROADWAY	SEGMENT	LINK SEGMENT COORDINATES				SEGMENT LENGTH (feet)	HEIGHT (feet)	PM PEAK HOUR VOLUMES				PEAK HR BASE				DELAY TIME PER VEHICLE (SEC)			
		X1	Y1	X2	Y2			LANES	NO ACTION	ALT A	ALT B	ALT C	ALT D	SPEED	NO ACT	ALT A	ALT B	ALT C	ALT D
UNION	N OF 880 + RAMP	10635	3193	10635	3671	0	478	4	1000	1073	960	902	1081	10	16	17	16	16	17
	S OF 880 + RAMP	10635	3671	10635	4174	0	503	4	433	433	433	433	433	25	5	5	5	5	5
FRONTAGE	S OF W GRAND	8950	7141	8222	5733	0	1585	4	1547	1569	1650	1753	1565	25	5	5	5	5	5
	S OF 14TH	8222	5733	7819	4928	0	900	4	512	706	717	836	778	25	5	5	5	5	5
W GRAND	W OF FRONTAGE	7543	7593	8950	7141	0	1478	4	2213	2267	2292	2276	2340	25	5	5	5	5	5
	E OF FRONTAGE	8950	7141	9931	6864	0	1019	4	1149	1031	1127	1093	1028	10	22	22	22	22	23

TABLE N-2. CALINE4 RECEPTOR COORDINATES

RECEPTOR LOCATION	X-COORD	Y-COORD	OFFSET
MARITIME & BURMA, NW	7,262	7,264	75
MARITIME & BURMA, SW	7,192	7,132	75
MARITIME & BURMA, NE	7,396	7,197	75
MARITIME & BURMA, SE	7,326	7,065	75
MARITIME & 7TH ST EXT, NW	5,868	4,320	65
MARITIME & 7TH ST EXT, SW	5,806	4,190	65
MARITIME & 7TH ST EXT, NE	5,959	4,208	65
MARITIME & 7TH ST EXT, SE	5,896	4,080	65
7TH & 880, NW	7,535	3,958	65
7TH & 880, SW	7,567	3,830	65
7TH & 880, NE	7,666	3,962	65
7TH & 880, SE	7,746	3,832	65
ADELINE & 3RD, NW	11,023	3,258	65
ADELINE & 3RD, SW	10,998	3,128	65
ADELINE & 3RD, NE	11,153	3,258	65
ADELINE & 3RD, SE	11,135	3,128	65
ADELINE & 880, NW	11,023	3,743	65
ADELINE & 880, SW	11,023	3,613	65
ADELINE & 880, NE	11,153	3,746	65
ADELINE & 880, SE	11,153	3,616	65
PORT VIEW PARK	2,693	2,323	
MIDDLE HARBOR PARK	8,712	713	
ERNIE RAIMONDI FIELD	9,425	6,890	
WILLOW MINI PARK	9,240	5,729	
BERTHA PORT TOT LOT	8,554	4,330	
CHESTER STREET TOT LOT	9,821	3,515	

Note: Coordinates and roadway offset distances are in feet.

TABLE N-3. OPERATING MODES FOR SURFACE STREET TRAFFIC

TRIP PURPOSE	TRIP PURPOSE MIX	HOT STABLE FRACTION	COLD START FRACTION	HOT START FRACTION
H-W	40.00%	50.00%	46.25%	3.75%
H-S	10.00%	45.00%	28.97%	26.03%
H-O	20.00%	60.00%	27.23%	12.77%
O-W	20.00%	50.00%	31.20%	18.80%
O-O	10.00%	45.00%	15.77%	39.23%
CHECKSUM:	100.00%	51.00%	WTD MEAN: 34.66%	14.34%

START MODE = FIRST 505 SECONDS OF VEHICLE TRAVEL

STABLE MODE = TRAVEL AFTER 505 SECONDS OF VEHICLE OPERATION

CATALYST FRACTION FOR LDA + LDT + MDT + MC 98.92%

	COLD START	HOT START
CATALYST	34.76%	14.24%
NONCATALYST	25.85%	23.15%

START MODE SPLIT FACTORS:

TRIP PURPOSE	CATALYST VEHICLES		NONCAT VEHICLES	
	COLD STARTS	HOT STARTS	COLD STARTS	HOT STARTS
H-W	92.63%	7.37%	80.04%	19.96%
H-S	52.89%	47.11%	33.61%	66.39%
H-O	68.35%	31.65%	43.38%	56.62%
O-W	62.64%	37.36%	40.73%	59.27%
O-O	28.90%	71.10%	8.25%	91.75%
WTD MEAN:	71.43%	28.57%	53.02%	46.98%

TABLE N-4. OPERATING MODES FOR FREEWAY TRAFFIC

TRIP PURPOSE	TRIP PURPOSE MIX	HOT STABLE FRACTION	COLD START FRACTION	HOT START FRACTION
H-W	60.00%	90.00%	9.25%	0.75%
H-S	5.00%	65.00%	18.44%	16.56%
H-O	10.00%	80.00%	13.62%	6.38%
O-W	20.00%	80.00%	12.48%	7.52%
O-O	5.00%	82.50%	5.02%	12.48%
CHECKSUM:	100.00%	85.38%	WTD MEAN: 10.58%	4.04%

START MODE = FIRST 505 SECONDS OF VEHICLE TRAVEL
 STABLE MODE = TRAVEL AFTER 505 SECONDS OF VEHICLE OPERATION

CATALYST FRACTION FOR LDA + LDT + MDT + MC 98.92%

	COLD START	HOT START
CATALYST	10.61%	4.02%
NONCATALYST	7.96%	6.67%

START MODE SPLIT FACTORS:

TRIP PURPOSE	CATALYST VEHICLES		NONCAT VEHICLES	
	COLD STARTS	HOT STARTS	COLD STARTS	HOT STARTS
H-W	92.63%	7.37%	80.04%	19.96%
H-S	52.89%	47.11%	33.61%	66.39%
H-O	68.35%	31.65%	43.38%	56.62%
O-W	62.64%	37.36%	40.73%	59.27%
O-O	28.90%	71.10%	8.25%	91.75%
WTD MEAN:	79.03%	20.97%	62.60%	37.40%

TABLE N-5. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT FREEWAY TRAFFIC IN 2010

INPUT VARIABLES	80-1	80-2	80-3	880-1	880-2	880-3	880-4	880-5	880-6	880-7	880-8	880-9	880-10	880-11
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	35	25	25	35	35	35	35	35	35	35	35
LINK LENGTH, FEET	6.625	2.936	2.113	2.826	1.074	976	2.507	1.063	907	1.075	836	664	1.333	1.154
DELAY PER VEHICLE, SECONDS OF IDLE	50	20	75	5	30	30	15	15	10	10	10	10	10	10
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
100% STABILIZED 16 MPH RATE, GM/MI	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
% CATALYST VEHICLES	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
% CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
OUTPUT														
HOT STABILIZED IDLE RATE, GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	6.99	13.65	13.65	6.99	6.99	6.99	6.99	6.99	6.99	6.99	6.99
IDLE SECONDS IN EMFAC/MOBILE RATES	24.66	10.93	7.87	3.85	4.00	3.63	3.41	1.45	1.24	1.46	1.14	0.90	1.82	1.57
REQUIRED EXTRA IDLE SECONDS	25.34	9.07	67.13	1.15	26.00	26.37	11.59	13.55	8.76	8.54	8.86	9.10	8.18	8.43
WEIGHTED % COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
ADDED IDLE ADJUSTMENT, GM/MI	0.41	0.33	3.43	0.04	2.62	2.92	0.50	1.38	1.04	0.86	1.15	1.48	0.66	0.79
ADJUSTED EMISSION RATE, GM/MI	4.18	4.10	7.20	3.02	6.39	6.69	3.48	4.36	4.02	3.84	4.13	4.46	3.64	3.77
ADJUSTMENT FACTOR, % INCREASE	11.0%	8.9%	91.1%	1.5%	69.4%	77.5%	16.8%	46.2%	35.1%	28.8%	38.5%	49.7%	22.3%	26.5%

TABLE N-5. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT FREEWAY TRAFFIC IN 2010

INPUT VARIABLES	880-12	980-1	980-2	980-3	980-4	980-5	980-6	980-7	SR 24	580-1	580-2	580-3	580-4
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	25	25	25	25	25	25	25	25	25	25
LINK LENGTH, FEET	1,761	635	509	1,608	1,869	513	1,486	2,218	1,414	1,057	933	3,017	1,233
DELAY PER VEHICLE, SECONDS OF IDLE	35	30	30	30	30	30	30	30	30	45	45	45	45
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
100% STABILIZED 16 MPH RATE, GM/MI	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
% CATALYST VEHICLES	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
% CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
OUTPUT													
HOT STABILIZED IDLE RATE, GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
IDLE SECONDS IN EMFAC/MOBILE RATES	6.56	2.36	1.89	5.99	6.96	1.91	5.53	8.26	5.26	3.93	3.47	11.23	4.59
REQUIRED EXTRA IDLE SECONDS	28.44	27.64	28.11	24.01	23.04	28.09	24.47	21.74	24.74	41.07	41.53	33.77	40.41
WEIGHTED % COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
ADDED IDLE ADJUSTMENT, GM/MI	1.75	4.70	5.97	1.61	1.33	5.92	1.78	1.06	1.89	4.20	4.81	1.21	3.54
ADJUSTED EMISSION RATE, GM/MI	5.52	8.47	9.74	5.38	5.10	9.69	5.55	4.83	5.66	7.97	8.58	4.98	7.31
ADJUSTMENT FACTOR, % INCREASE	46.3%	124.8%	158.3%	42.8%	35.4%	157.0%	47.2%	28.1%	50.2%	111.4%	127.6%	32.1%	94.0%

TABLE N-6. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: VISION 2000 PLAN FREEWAY TRAFFIC IN 2010

INPUT VARIABLES	80-1	80-2	80-3	880-1	880-2	880-3	880-4	880-5	880-6	880-7	880-8	880-9	880-10	880-11
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	35	25	25	35	35	35	35	35	35	35	35
LINK LENGTH, FEET	6,625	2,936	2,113	2,826	1,074	976	2,507	1,063	907	1,075	836	664	1,333	1,154
DELAY PER VEHICLE, SECONDS OF IDLE	50	20	75	5	30	30	15	15	10	10	10	10	10	15
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
100% STABILIZED 16 MPH RATE, GM/MI	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
% CATALYST VEHICLES	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
% CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
OUTPUT														
HOT STABILIZED IDLE RATE, GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	13.65	6.99	13.65	13.65	6.99	6.99	6.99	6.99	6.99	6.99	6.99	6.99
IDLE SECONDS IN EMFAC/MOBILE RATES	24.66	10.93	7.87	3.85	4.00	3.63	3.41	1.45	1.24	1.46	1.14	0.90	1.82	1.57
REQUIRED EXTRA IDLE SECONDS	25.34	9.07	67.13	1.15	26.00	26.37	11.59	13.55	8.76	8.54	8.86	9.10	8.18	13.43
WEIGHTED % COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	2.98	3.77	3.77	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
ADDED IDLE ADJUSTMENT, GM/MI	0.41	0.33	3.43	0.04	2.62	2.92	0.50	1.38	1.04	0.86	1.15	1.48	0.66	1.26
ADJUSTED EMISSION RATE, GM/MI	4.18	4.10	7.20	3.02	6.39	6.69	3.48	4.36	4.02	3.84	4.13	4.46	3.64	4.24
ADJUSTMENT FACTOR, % INCREASE	11.0%	8.9%	91.1%	1.5%	69.4%	77.5%	16.8%	46.2%	35.1%	28.8%	38.5%	49.7%	22.3%	42.2%

TABLE N-6. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: VISION 2000 PLAN FREEWAY TRAFFIC IN 2010

INPUT VARIABLES	880-12	980-1	980-2	980-3	980-4	980-5	980-6	980-7	SR 24	580-1	580-2	580-3	580-4
SPEED (MPH) FOR BASE EMISSION RATE	25	25	25	25	25	25	25	25	25	25	25	25	25
LINK LENGTH, FEET	1,761	635	509	1,608	1,869	513	1,486	2,218	1,414	1,057	933	3,017	1,233
DELAY PER VEHICLE, SECONDS OF IDLE	45	30	30	30	30	30	30	30	30	45	45	45	45
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
100% STABILIZED 5 MPH RATE, GM/MI	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72	11.72
100% STABILIZED 16 MPH RATE, GM/MI	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07	5.07
100% COLD START 16 MPH RATE, GM/MI	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42
% CATALYST VEHICLES	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96	7.96
% CATALYST COLD STARTS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
OUTPUT													
HOT STABILIZED IDLE RATE, GM/MIN	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
ADJUSTED COLD START 5 MPH RATE, GM/MI	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27	40.27
COLD START IDLE RATE, GM/MIN	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557	3.3557
% IDLE TIME IN ENFAC/MOBILE RATES	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
IDLE SECONDS IN ENFAC/MOBILE RATES	6.56	2.36	1.89	5.99	6.96	1.91	5.53	8.26	5.26	3.93	3.47	11.23	4.59
REQUIRED EXTRA IDLE SECONDS	38.44	27.64	28.11	24.01	23.04	28.09	24.47	21.74	24.74	41.07	41.53	33.77	40.41
WEIGHTED % COLD STARTS	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58	10.58
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284	1.2284
BASE EMISSION RATE, GM/MI	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
ADDED IDLE ADJUSTMENT, GM/MI	2.36	4.70	5.97	1.61	1.33	5.92	1.78	1.06	1.89	4.20	4.81	1.21	3.54
ADJUSTED EMISSION RATE, GM/MI	6.13	8.47	9.74	5.38	5.10	9.69	5.55	4.83	5.66	7.97	8.58	4.98	7.31
ADJUSTMENT FACTOR, % INCREASE	62.6%	124.8%	158.3%	42.8%	35.4%	157.0%	47.2%	28.1%	50.2%	111.4%	127.6%	32.1%	94.0%

TABLE N-7. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR -3	MAR-4	7TH-1	7TH-2	7TH-3	7TH-4	7TH-EXT	7TH-6	7TH-7 M HRBR-1
SPEED (MPH) FOR BASE EMISSION RATE	10	25	25	10	25	25	25	25	10	25	15
LINK LENGTH, FEET	496	1,811	1,473	562	1,193	731	1,075	587	518	1,387	1,433
DELAY PER VEHICLE, SECONDS OF IDLE	19	10	20	11	5	5	5	5	19	5	19
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	6.17	6.17	6.17	6.17	12.02	6.17	9.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATALYST VEHICLES	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT											
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	32.99	13.65	13.65	32.99	13.65	13.65	13.65	13.65	32.99	13.65	25.39
IDLE SECONDS IN EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	4.44	2.72	4.00	2.19	11.65	5.16	16.54
REQUIRED EXTRA IDLE SECONDS	7.84	3.26	14.52	0.00	0.56	2.28	1.00	2.81	7.35	0.00	2.46
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	6.17	6.17	6.17	6.17	12.02	6.17	9.02
ADDED IDLE ADJUSTMENT, GM/MI	2.25	0.26	1.41	0.00	0.07	0.44	0.13	0.68	2.02	0.00	0.24
ADJUSTED EMISSION RATE, GM/MI	14.27	6.43	7.58	12.02	6.24	6.61	6.30	6.85	14.04	6.17	9.26
ADJUSTMENT FACTOR, % INCREASE	18.8%	4.2%	22.8%	0.0%	1.1%	7.2%	2.1%	11.1%	16.8%	0.0%	2.7%

TABLE N-7. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: NO PROJECT SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M	HRBR-2	M	HRBR-3	M	HRBR-4	M	HRBR-5	ADELIN-1	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2	
SPEED (MPH) FOR BASE EMISSION RATE		25		25		15		10		25		10		25		25	10
LINK LENGTH, FEET		1,910		2,361		2,333		398		503		478		1,585		1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE		5		5		19		38		5		20		5		5	22
BASE EMISSION RATE, GM/MI		6.17		6.17		9.02		12.02		6.17		12.02		6.17		6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI		15.91		15.91		15.91		15.91		15.91		15.91		15.91		15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI		7.29		7.29		7.29		7.29		7.29		7.29		7.29		7.29	7.29
100% COLD START 16 MPH RATE, GM/MI		11.96		11.96		11.96		11.96		11.96		11.96		11.96		11.96	11.96
% CATALYST VEHICLES		98.92		98.92		98.92		98.92		98.92		98.92		98.92		98.92	98.92
% NON-CATALYST COLD STARTS		25.85		25.85		25.85		25.85		25.85		25.85		25.85		25.85	25.85
% CATALYST COLD STARTS		34.76		34.76		34.76		34.76		34.76		34.76		34.76		34.76	34.76
OUTPUT																	
HOT STABILIZED IDLE RATE, GM/MIN		1.33		1.33		1.33		1.33		1.33		1.33		1.33		1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI		26.10		26.10		26.10		26.10		26.10		26.10		26.10		26.10	26.10
COLD START IDLE RATE, GM/MIN		2.1752		2.1752		2.1752		2.1752		2.1752		2.1752		2.1752		2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES		13.65		13.65		25.39		32.99		13.65		32.99		13.65		13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES		7.11		8.79		26.92		8.95		1.87		10.75		5.90		5.50	22.92
REQUIRED EXTRA IDLE SECONDS		0.00		0.00		0.00		29.05		3.13		5.25		0.00		0.00	0.00
WEIGHTED % COLD STARTS		34.66		34.66		34.66		34.66		34.66		34.66		34.66		34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN		1.6202		1.6202		1.6202		1.6202		1.6202		1.6202		1.6202		1.6202	1.6202
BASE EMISSION RATE, GM/MI		6.17		6.17		9.02		12.02		6.17		12.02		6.17		6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI		0.00		0.00		0.00		10.41		0.89		2.76		0.00		0.00	0.00
ADJUSTED EMISSION RATE, GM/MI		6.17		6.17		9.02		22.43		7.06		14.78		6.17		6.17	12.02
ADJUSTMENT FACTOR, % INCREASE		0.0%		0.0%		0.0%		86.6%		14.4%		23.0%		0.0%		4.2%	0.0%

TABLE N-8. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE A SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2	M HRBR-3	M HRBR-4	M HRBR-5	ADELIN-1	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	25	25	15	10	25	10	10	25	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	900	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE	5	5	32	64	5	30	17	5	5	5	5	22
BASE EMISSION RATE, GM/MI	6.17	6.17	9.02	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATALYST VEHICLES	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS	0.00	0.00	5.08	55.05	3.13	19.25	6.25	3.13	0.00	1.65	0.00	0.00
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.02	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	0.31	19.72	0.89	5.74	1.86	0.89	0.00	0.26	0.00	0.00
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.33	31.74	7.06	17.76	13.88	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	3.4%	164.1%	14.4%	47.8%	15.5%	14.4%	0.0%	4.2%	0.0%	0.0%

TABLE N-9. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE B SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2	M HRBR-3	M HRBR-4	M HRBR-5	ADELIN-1	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	25	25	15	10	25	10	10	25	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	900	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE	5	5	32	64	5	21	16	5	5	5	5	22
BASE EMISSION RATE, GM/MI	6.17	6.17	9.02	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATALYST VEHICLES	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS	0.00	0.00	5.08	55.05	3.13	10.25	5.25	3.13	0.00	1.65	0.00	0.00
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.02	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	0.31	19.72	0.89	3.06	1.57	0.89	0.00	0.26	0.00	0.00
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.33	31.74	7.06	15.08	13.59	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	3.4%	164.1%	14.4%	25.4%	13.0%	14.4%	0.0%	4.2%	0.0%	0.0%

TABLE N-10. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE C SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M	HRBR-2	M	HRBR-3	M	HRBR-4	M	HRBR-5	ADELIN-1	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE		25	25	25	15	10	25	10	25	10	10	25	25	25	25	10
LINK LENGTH, FEET		1.910	2.361	2.333	2.333	398	503	478	503	478	478	503	1,585	900	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE		5	5	46	46	92	5	22	5	22	16	5	5	5	5	22
BASE EMISSION RATE, GM/MI		6.17	6.17	9.02	9.02	12.02	6.17	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI		15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI		7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI		11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATALYST VEHICLES		98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS		25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS		34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT																
HOT STABILIZED IDLE RATE, GM/MIN		1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI		26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN		2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES		13.65	13.65	25.39	25.39	32.99	13.65	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES		7.11	8.79	26.92	26.92	8.95	1.87	10.75	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS		0.00	0.00	19.08	19.08	83.05	3.13	11.25	3.13	11.25	5.25	3.13	0.00	1.65	0.00	0.00
WEIGHTED % COLD STARTS		34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN		1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI		6.17	6.17	9.02	9.02	12.02	6.17	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI		0.00	0.00	1.17	1.17	29.75	0.89	3.36	0.89	3.36	1.57	0.89	0.00	0.26	0.00	0.00
ADJUSTED EMISSION RATE, GM/MI		6.17	6.17	10.19	10.19	41.77	7.06	15.38	7.06	15.38	13.59	7.06	6.17	6.43	6.17	12.02
ADJUSTMENT FACTOR, % INCREASE		0.0%	0.0%	12.9%	12.9%	247.5%	14.4%	27.9%	14.4%	27.9%	13.0%	14.4%	0.0%	4.2%	0.0%	0.0%

TABLE N-11. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE D SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	MAR-1	MAR-2	MAR-3	MAR-4	7TH-1	7TH-2	7TH-3	7TH-4	7TH-EXT	7TH-6	7TH-7 M HRBR-1
SPEED (MPH) FOR BASE EMISSION RATE	10	25	25	10	15	25	25	25	10	25	15
LINK LENGTH, FEET	496	1,811	1,473	562	1,193	731	1,075	587	518	1,387	1,433
DELAY PER VEHICLE, SECONDS OF IDLE	19	9	20	14	17	5	5	5	15	5	19
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.02	6.17	6.17	6.17	12.02	6.17	9.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATALYST VEHICLES	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT											
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	32.99	13.65	13.65	32.99	25.39	13.65	13.65	13.65	32.99	13.65	25.39
IDLE SECONDS IN EMFAC/MOBILE RATES	11.16	6.74	5.48	12.64	13.77	2.72	4.00	2.19	11.65	5.16	16.54
REQUIRED EXTRA IDLE SECONDS	7.84	2.26	14.52	1.36	3.23	2.28	1.00	2.81	3.35	0.00	2.46
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	12.02	6.17	6.17	12.02	9.02	6.17	6.17	6.17	12.02	6.17	9.02
ADDED IDLE ADJUSTMENT, GM/MI	2.25	0.18	1.41	0.34	0.39	0.44	0.13	0.68	0.92	0.00	0.24
ADJUSTED EMISSION RATE, GM/MI	14.27	6.35	7.58	12.36	9.41	6.61	6.30	6.85	12.94	6.17	9.26
ADJUSTMENT FACTOR, % INCREASE	18.8%	2.9%	22.8%	2.9%	4.3%	7.2%	2.1%	11.1%	7.7%	0.0%	2.7%

TABLE N-11. EMISSION FACTOR ADJUSTMENTS FOR EXTENDED ENGINE IDLING TIME: ALTERNATIVE D SURFACE STREET TRAFFIC IN 2010

INPUT VARIABLES	M HRBR-2	M HRBR-3	M HRBR-4	M HRBR-5	ADELIN-1	ADELIN-2	UNION-1	UNION-2	FRNTG-1	FRNTG-2	GRAND-1	GRAND-2
SPEED (MPH) FOR BASE EMISSION RATE	25	25	15	10	25	10	10	25	25	25	25	10
LINK LENGTH, FEET	1,910	2,361	2,333	398	503	478	478	503	1,585	900	1,478	1,019
DELAY PER VEHICLE, SECONDS OF IDLE	5	5	36	72	5	31	17	5	5	5	5	23
BASE EMISSION RATE, GM/MI	6.17	6.17	9.02	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
100% STABILIZED 5 MPH RATE, GM/MI	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91	15.91
100% STABILIZED 16 MPH RATE, GM/MI	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
100% COLD START 16 MPH RATE, GM/MI	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96	11.96
% CATALYST VEHICLES	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92	98.92
% NON-CATALYST COLD STARTS	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85	25.85
% CATALYST COLD STARTS	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76	34.76
OUTPUT												
HOT STABILIZED IDLE RATE, GM/MIN	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
ADJUSTED COLD START 5 MPH RATE, GM/MI	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10	26.10
COLD START IDLE RATE, GM/MIN	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752	2.1752
% IDLE TIME IN EMFAC/MOBILE RATES	13.65	13.65	25.39	32.99	13.65	32.99	32.99	13.65	13.65	13.65	13.65	32.99
IDLE SECONDS IN EMFAC/MOBILE RATES	7.11	8.79	26.92	8.95	1.87	10.75	10.75	1.87	5.90	3.35	5.50	22.92
REQUIRED EXTRA IDLE SECONDS	0.00	0.00	9.08	63.05	3.13	20.25	6.25	3.13	0.00	1.65	0.00	0.08
WEIGHTED % COLD STARTS	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66	34.66
WEIGHTED COLD/HOT IDLE RATE, GM/MIN	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202	1.6202
BASE EMISSION RATE, GM/MI	6.17	6.17	9.02	12.02	6.17	12.02	12.02	6.17	6.17	6.17	6.17	12.02
ADDED IDLE ADJUSTMENT, GM/MI	0.00	0.00	0.55	22.59	0.89	6.04	1.86	0.89	0.00	0.26	0.00	0.01
ADJUSTED EMISSION RATE, GM/MI	6.17	6.17	9.57	34.61	7.06	18.06	13.88	7.06	6.17	6.43	6.17	12.03
ADJUSTMENT FACTOR, % INCREASE	0.0%	0.0%	6.1%	187.9%	14.4%	50.2%	15.5%	14.4%	0.0%	4.2%	0.0%	0.1%

TABLE N-12. VEHICLE TRAVEL TIME PATTERNS AND OPERATING MODES FOR VISION 2000 ALTERNATIVES IN 2010

DISTRIBUTION OF TRAVEL BY TRIP DURATION INTERVALS												
TRIP TYPE	PORTION OF TOTAL TRIPS	UNDER 8 MINUTES	8 - 10 MINUTES	10 - 15 MINUTES	15 - 20 MINUTES	20 - 25 MINUTES	25 - 30 MINUTES	30 - 35 MINUTES	35 - 40 MINUTES	40 - 45 MINUTES	45 - 50 MINUTES	50 - 120 MINUTES
H-W	40.00%	10.00%	5.00%	15.00%	20.00%	15.00%	10.00%	5.00%	5.00%	5.00%	5.00%	5.00%
H-S	0.00%	35.00%	25.00%	15.00%	12.00%	6.00%	2.00%	1.00%	1.00%	1.00%	1.00%	1.00%
H-O	5.00%	20.00%	20.00%	25.00%	15.00%	10.00%	5.00%	1.00%	1.00%	1.00%	1.00%	1.00%
O-W	50.00%	15.00%	10.00%	15.00%	20.00%	10.00%	10.00%	5.00%	5.00%	3.00%	3.00%	4.00%
O-O	5.00%	17.50%	20.00%	25.00%	15.00%	10.00%	5.00%	2.50%	1.00%	1.00%	1.00%	2.00%
INT TRK	0.00%	85.00%	10.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
REG TRK	0.00%	5.00%	5.00%	5.00%	10.00%	20.00%	20.00%	10.00%	10.00%	5.00%	5.00%	5.00%
EXT TRK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	80.00%
SUM/MEAN	100.00%	13.38%	9.00%	16.00%	19.50%	12.00%	9.50%	4.68%	4.60%	3.60%	3.60%	4.15%

CUMULATIVE TRIP OPERATING MODES (FOR TOTAL EMISSIONS ANALYSES):

TRIP TYPE	MEAN TRAVEL TIME (MINUTES)	MEAN COLD START MODE	MEAN HOT START MODE	MEAN HOT STABLE MODE	NONCAT COLD START MODE	NONCAT HOT START MODE	CATALYST COLD START MODE	CATALYST HOT START MODE
H-W	24.75	44.52%	3.61%	51.86%	38.53%	9.61%	44.59%	3.55%
H-S	12.50	41.31%	37.10%	21.59%	26.35%	52.06%	41.47%	36.94%
H-O	14.73	47.21%	22.13%	30.66%	30.08%	39.26%	47.39%	21.95%
O-W	21.70	34.39%	20.72%	44.89%	22.45%	32.66%	34.52%	20.59%
O-O	15.93	19.31%	48.03%	32.66%	5.56%	61.79%	19.46%	47.88%
INT TRK	6.20	76.32%	21.51%	2.17%	59.33%	38.50%	76.51%	21.32%
REG TRK	28.85	26.87%	12.03%	61.11%	19.70%	19.19%	26.95%	11.95%
EXT TRK	77.50	8.21%	4.59%	87.19%	5.11%	7.70%	8.25%	4.56%
MEANS	22.28	38.33%	15.31%	46.36%	28.42%	25.23%	38.44%	15.21%

TABLE N-13. PORT OF OAKLAND/FISCO EMPLOYEE COMMUTE TRAVEL PATTERNS

RESIDENCY	EMPLOYEE TRIPS	PERCENT OF TRIPS	BAY AREA DISTANCE (MILES)	BAY AREA MILEAGE INCREMENT
OAKLAND/PIEDMONT	683	30.77%	5.05	1.55
ALAMEDA	24	1.08%	5.92	0.06
BERKELEY/ALBANY/EMERYVILLE	22	0.99%	6.51	0.06
SAN LEANDRO/SAN LORENZO	89	4.01%	14.20	0.57
HAYWARD/CASTRO VALLEY	235	10.59%	20.12	2.13
UNION CITY	23	1.04%	21.90	0.23
FREMONT/NEWARK	38	1.71%	24.86	0.43
DUBLIN/LIVERMORE/PLEASANTON	23	1.04%	31.96	0.33
SAN PABLO/PINOLE/RODEO	43	1.94%	14.20	0.28
RICHMOND/EL CERRITO	157	7.07%	10.06	0.71
PITTSBURG/ANTIOCH	114	5.14%	27.23	1.40
CONCORD/MARTINEZ	28	1.26%	24.86	0.31
ORINDA/LAFAYETTE/WALNUT CREEK	8	0.36%	15.39	0.06
ALAMO/DANVILLE/SAN RAMON	5	0.23%	24.86	0.06
SAN FRANCISCO	111	5.00%	13.02	0.65
SAN FRANCISCO LONGSHORE TRIPS	112	5.05%	13.02	0.66
SAN MATEO COUNTY	138	6.22%	21.31	1.32
SANTA CLARA COUNTY	82	3.69%	66.29	2.45
MARIN COUNTY	15	0.68%	22.49	0.15
NAPA/SONOMA COUNTIES	34	1.53%	43.80	0.67
SOLANO COUNTY	236	10.63%	36.70	3.90
TOTALS	2,220	100.00%		17.98

Notes: Residency distribution data provided by Dowling Associates.
 All distances estimated by map-measurer tracing of highway routes on a
 1:36,750 scale map for Oakland, and 1:150,000 scale maps for other
 locations.

TABLE N-14. PORT OF OAKLAND TRUCK TRAVEL PATTERNS WITHIN THE BAAQMD

DESTINATION	TRUCK TRIPS	PERCENT OF TRIPS	BAY AREA DISTANCE (MILES)	BAY AREA MILEAGE INCREMENT
OAKLAND	892	32.81%	6.51	2.14
ALAMEDA	11	0.40%	5.92	0.02
BERKELEY/ALBANY/EMERYVILLE	15	0.55%	6.51	0.04
SAN LEANDRO/SAN LORENZO	103	3.79%	14.20	0.54
HAYWARD/CASTRO VALLEY	95	3.49%	20.12	0.70
UNION CITY	43	1.58%	21.90	0.35
FREMONT/NEWARK	35	1.29%	24.86	0.32
DUBLIN/LIVERMORE/PLEASANTON	5	0.18%	31.96	0.06
SAN PABLO/PINOLE/RODEO	17	0.63%	14.20	0.09
RICHMOND	209	7.69%	10.06	0.77
PITTSBURG/ANTIOCH	19	0.70%	27.23	0.19
CONCORD/MARTINEZ	20	0.74%	24.86	0.18
ALAMO/DANVILLE/SAN RAMON	5	0.18%	24.86	0.05
SAN FRANCISCO	165	6.07%	13.02	0.79
SAN MATEO COUNTY	57	2.10%	21.31	0.45
SANTA CLARA COUNTY	136	5.00%	66.29	3.32
MARIN COUNTY	8	0.29%	22.49	0.07
NAPA/SONOMA COUNTIES	34	1.25%	43.80	0.55
SOLANO COUNTY	61	2.24%	36.70	0.82
SACRAMENTO AREA	165	6.07%	49.72	3.02
SAN JOAQUIN/STANISLAUS COUNTIES	227	8.35%	45.57	3.80
FRESNO/MERCED/MADERA COUNTIES	164	6.03%	45.57	2.75
KERN/KINGS/TULARE COUNTIES	20	0.74%	45.57	0.34
SANTA CRUZ COUNTY	7	0.26%	55.63	0.14
OTHER CALIFORNIA	105	3.86%	45.57	1.76
OTHER STATES	101	3.71%	49.72	1.85
TOTALS	2,719	100.00%		25.09
BAY AREA SUBTOTAL:		70.98%		16.11
SACRAMENTO:		6.07%		49.72
SAN JOAQUIN VALLEY:		15.12%		45.57
CENTRAL COAST:		0.26%		55.63
OTHER CALIFORNIA:		3.86%		45.57
OTHER STATES:		3.71%		49.72

Notes: Truck travel patterns from Port of Oakland 1993 truck survey.
 All distances estimated by map-measurer tracing of highway routes on
 1:150,000 scale maps.

TABLE N-15. SUMMER REACTIVE ORGANIC COMPOUND AND NITROGEN OXIDE EMISSION RATES FOR 2010

Land Use	Trip Purpose	Exhaust ROG Emission Rates (grams/mile) by Speed (mph)					Hot Soak ROG Rates (grams/trip)	Other Evap ROG Rates (gm/veh-day)	Exhaust NOx Emission Rates (grams/mile) by Speed (mph)				
		15	25	35	45	55			15	25	35	45	55
FISCO AREAS 1, 2, & 3	H-W	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
	H-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	H-O	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	0.66
	O-W	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	O-O	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
FISCO AREAS 4 & 5	H-W	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
	H-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	H-O	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	0.66
	O-W	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	O-O	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
JIT AREA	H-W	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
	H-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	H-O	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	0.66
	O-W	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	O-O	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
SPRR TERMINAL	H-W	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
	H-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	H-O	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	0.66
	O-W	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	O-O	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
UP RAIL TERMINAL	H-W	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
	H-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	H-O	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	0.66
	O-W	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	O-O	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61

TABLE N-15. SUMMER REACTIVE ORGANIC COMPOUND AND NITROGEN OXIDE EMISSION RATES FOR 2010

Land Use	Trip Purpose	Exhaust ROG Emission Rates (grams/mile) by Speed (mph)					Hot Soak ROG Rates (grams/trip)	Other Evap ROG Rates (gm/veh-day)	Exhaust NOx Emission Rates (grams/mile) by Speed (mph)				
		15	25	35	45	55			15	25	35	45	55
MARINE TERMINAL AREAS	H-W	0.44	0.30	0.27	0.24	0.25	0.21	1.21	0.51	0.42	0.41	0.48	0.62
	H-S	0.45	0.31	0.27	0.25	0.26	0.21	1.21	0.57	0.48	0.47	0.53	0.67
	H-O	0.46	0.32	0.29	0.26	0.27	0.21	1.21	0.56	0.47	0.46	0.53	0.66
	O-W	0.41	0.27	0.24	0.22	0.22	0.21	1.21	0.51	0.42	0.41	0.48	0.61
	O-O	0.37	0.23	0.20	0.18	0.19	0.21	1.21	0.51	0.42	0.41	0.47	0.61
ON-SITE TRUCK TRIPS	O-O	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87
BAY AREA TRUCK TRIPS	O-O	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87
LONG DISTANCE TRUCK TRIPS	O-O	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87
PORT OF RICHMOND TRUCKS	O-O	3.43	2.36	1.76	1.44	1.29	0.03	0.21	11.98	9.88	9.38	10.25	12.87

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

H-W = home - work trips

H-S = home - shopping trips

H-O = home - other trips

O-W = other - work trips

O-O = other - other trips

Emission rates for California vehicles were calculated for 2010 using the California Air Resources Board EMFAC7F computer program for exhaust emission rates, with diurnal and resting loss emissions calculated using data from the EMFAC7F model and calculation procedures presented in documentation reports for the EMFAC7F and BURDEN7C models (California Air Resources Board 1991, 1992, 1993).

Exhaust emission rates are based on an air temperature of 70 degrees Fahrenheit; diurnal emission rates are based on a summer day temperature profile (55-80 degree Fahrenheit range).

Exhaust emission rates incorporate cold start and hot start rate increments based on aggregate start mode travel fractions calculated from assumed trip-type travel time frequency distributions.

Emission rates for employment-based traffic includes only passenger vehicles.

Emission rates for internal and external truck traffic includes only heavy trucks (95% diesel, 5% gasoline).

TABLE N-16. VEHICLE-RELATED PH10 AND SUMMER/WINTER CARBON MONOXIDE EMISSION RATES FOR 2010

Land Use	Trip Purpose	Exhaust PH10 Rate (gm/mile)	Entrained PH10 Rate (gm/mile)	Summer CO Emission Rates (gm/ml) by Speed (mph)					Winter CO Emission Rates (gm/ml) by Speed (mph)				
				15	25	35	45	55	15	25	35	45	55
FISCO AREAS 1, 2, & 3	H-W	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	H-O	0.01	3.10	5.37	4.25	3.81	3.66	3.98	6.69	5.46	4.96	4.79	5.14
	O-W	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	O-O	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
FISCO AREAS 4 & 5	H-W	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	H-O	0.01	3.10	5.37	4.25	3.81	3.66	3.98	6.69	5.46	4.96	4.79	5.14
	O-W	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	O-O	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
JIT AREA	H-W	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	H-O	0.01	3.10	5.37	4.25	3.81	3.66	3.98	6.69	5.46	4.96	4.79	5.14
	O-W	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	O-O	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
SPRR TERMINAL	H-W	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	H-O	0.01	3.10	5.37	4.25	3.81	3.66	3.98	6.69	5.46	4.96	4.79	5.14
	O-W	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	O-O	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
UP RAIL TERMINAL	H-W	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	H-O	0.01	3.10	5.37	4.25	3.81	3.66	3.98	6.69	5.46	4.96	4.79	5.14
	O-W	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	O-O	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63

TABLE N-16. VEHICLE-RELATED PM10 AND SUMMER/WINTER CARBON MONOXIDE EMISSION RATES FOR 2010

Land Use	Trip Purpose	Exhaust PM10 Rate (gm/mile)	Entrained PM10 Rate (gm/mile)	Summer CO Emission Rates (gm/mi) by Speed (mph)					Winter CO Emission Rates (gm/mi) by Speed (mph)				
				15	25	35	45	55	15	25	35	45	55
MARINE TERMINAL AREAS	H-W	0.01	3.10	5.07	3.95	3.51	3.36	3.68	6.30	5.07	4.57	4.40	4.76
	H-S	0.01	3.10	5.24	4.12	3.68	3.53	3.85	6.48	5.24	4.74	4.58	4.93
	H-O	0.01	3.10	5.37	4.25	3.81	3.66	3.98	6.69	5.46	4.96	4.79	5.14
	O-W	0.01	3.10	4.77	3.65	3.21	3.06	3.38	5.84	4.60	4.11	3.94	4.29
	O-O	0.01	3.10	4.34	3.23	2.78	2.63	2.95	5.17	3.94	3.44	3.27	3.63
ON-SITE TRUCK TRIPS	O-O	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60
BAY AREA TRUCK TRIPS	O-O	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60
LONG DISTANCE TRUCK TRIPS	O-O	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60
PORT OF RICHMOND TRUCKS	O-O	0.98	3.54	17.21	10.26	7.35	6.33	6.55	17.33	10.33	7.40	6.38	6.60

Notes: PM10 = inhalable particulate matter

CO = carbon monoxide

H-W = home - work trips

H-S = home - shopping trips

H-O = home - other trips

O-W = other - work trips

O-O = other - other trips

Emission rates for California vehicles calculated for 2010 using the California Air Resources Board ENFAC7F computer program.

Entrained PM10 emission rates include tire wear plus 2.9 grams/WHT of resuspended paved roadway dust.

Summer CO emission rates based on an air temperature of 70 degrees Fahrenheit; winter CO emission rates based on an air temperature of 50 degrees Fahrenheit.

Exhaust emission rates incorporate cold start and hot start rate increments based on aggregate start mode travel fractions calculated from assumed trip-type travel time frequency distributions.

Emission rates for employment-based traffic includes only passenger vehicles.

Emission rates for internal and external truck traffic includes only heavy trucks (95% diesel, 5% gasoline).

TABLE N-17. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, NO ACTION ALTERNATIVE

Land Use or Trip Generation Category	Trip Estimate Basis	Base Trip Generation		Vehicle Rate	P/A Trip Rate Splits	Base Trip		% Productions		Number of		% Attractions		Number of		Internal/		Net		Trip Rate	
		Rate	Rate			Volume	Volume	W Internal	Destinations	Internal Trip	Productions	W Internal	Origins	Internal Trip	Attractions	Trips	Trips	Generated	Trips	Adjusted	Factor
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	3.50	0.6	10%	90%	1,750	0%	0%	0	0	0%	0%	0	0	0	1,750	1,750	1,750	3.5	0.0%	
FISCO AREAS 4 & 5	200 EMPLOYEES	3.50	0.6	10%	90%	700	0%	0%	0	0	0%	0%	0	0	0	700	700	700	3.5	0.0%	
JIT AREA	0 EMPLOYEES	0.00	0.0	10%	90%	0	0%	0%	0	0	0%	0%	0	0	0	0	0	0	0.0	0.0%	
SPRR TERMINAL	130 EMPLOYEES	3.50	0.6	10%	90%	455	0%	0%	0	0	0%	0%	0	0	0	455	455	455	3.5	0.0%	
UP RAIL TERMINAL	82 EMPLOYEES	3.50	0.6	10%	90%	287	0%	0%	0	0	0%	0%	0	0	0	287	287	287	3.5	0.0%	
MARINE TERMINAL AREAS	1,835 EMPLOYEES	3.50	0.6	10%	90%	6,423	0%	0%	0	0	0%	0%	0	0	0	6,423	6,423	6,423	3.5	0.0%	
ON-SITE TRUCK TRIPS	469 ACRES	1.26	0.0	50%	50%	589	0%	0%	0	0	0%	0%	0	0	0	589	589	589	1.3	0.0%	
BAY AREA TRUCK TRIPS	469 ACRES	20.93	0.0	50%	50%	9,815	0%	0%	0	0	0%	0%	0	0	0	9,815	9,815	9,815	20.9	0.0%	
LONG DISTANCE TRUCK TRIPS	469 ACRES	8.57	0.0	50%	50%	4,021	0%	0%	0	0	0%	0%	0	0	0	4,021	4,021	4,021	8.6	0.0%	
PORT OF RICHMOND TRUCKS	469 ACRES	0.05	0.0	50%	50%	23	0%	0%	0	0	0%	0%	0	0	0	23	23	23	0.0	0.0%	
TOTALS						24,063	0							0		24,063	24,063	24,063			

Notes: Employment estimates by subarea taken from traffic modeling analyses performed by Dowling & Associates.

Average daily employee trip rates are based on ITE trip generation manual rates for light industrial uses (Institute of Transportation Engineers, 1991).

Average daily truck trip rates are back calculated from peak week truck trip estimates provided by Jordan Woodman Dobson; average daily truck trips are estimated to be 80% of peak week trips for marine terminals and 84% of peak week trips for rail terminals.

Port of Richmond truck trips are assumed to be 3.8% of total marine-to-rail truck trips.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

Production/attraction splits reflect the origin of a round trip.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = Internal/external trips + 50% of Internal productions + 50% of Internal attractions.

TABLE N-18. TRIP PURPOSE, TCH EFFECTS AND TRAVEL TIME DISAGGREGATIONS, NO ACTION ALTERNATIVE

Land Use	Trip Estimate Basis	Trip Purpose	Percent of Net Trips	Net Trip Rates	TCH Program Effect	Adjusted Net Trip Rate	Adjusted Net Trips	Overall TCH Effectiveness	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (mph)				
										15	25	35	45	55
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	700		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	88		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	875		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	88		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
FISCO AREAS 4 & 5	200 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	280		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	35		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	350		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	35		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
JIT AREA	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
SPRR TERMINAL	130 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	182		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	23		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	228		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	23		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
UP RAIL TERMINAL	82 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	115		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	14		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	144		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	14		15.93	10.0%	25.0%	35.0%	15.0%	15.0%

TABLE N-18. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, NO ACTION ALTERNATIVE

Land Use	Trip Estimate Basis	Trip Purpose	Percent of Net Trips	Net Trip Rates	TCM Program Effect	Adjusted Net Trip Rate	Adjusted Net Trips	Overall TCM Effectiveness	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (mph)				
										15	25	35	45	55
MARINE TERMINAL AREAS	1,835 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	2,569		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	321		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	3,212		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	321		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
ON-SITE TRUCK TRIPS	469 ACRES	O-O	100.0%	1.3	0%	1.3	589		6.20	75.0%	20.0%	5.0%	0.0%	0.0%
BAY AREA TRUCK TRIPS	469 ACRES	O-O	100.0%	20.9	0%	20.9	9,815		28.85	15.0%	25.0%	30.0%	20.0%	10.0%
LONG DISTANCE TRUCK TRIPS	469 ACRES	O-O	100.0%	8.6	0%	8.6	4,021		77.50	10.0%	20.0%	25.0%	25.0%	20.0%
PORT OF RICHMOND TRUCKS	469 ACRES	O-O	100.0%	0.0	0%	0.0	23		18.00	10.0%	20.0%	25.0%	25.0%	20.0%
TOTALS							24,065	0.0%						

Notes: H-W = home-work trips

H-S = home-shopping trips

H-O = home-other trips

O-W = other-work trips

O-O = other-other trips

TCM = transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE N-19. VEHICLE TRAVEL SUMMARY, NO ACTION ALTERNATIVE

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	H-W	700	24.8	17.94	12,561	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	88	14.7	8.59	756	35.0
		O-W	875	21.7	14.83	12,975	41.0
		O-O	88	15.9	9.29	818	35.0
FISCO AREAS 4 & 5	200 EMPLOYEES	H-W	280	24.8	17.94	5,024	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	35	14.7	8.59	301	35.0
		O-W	350	21.7	14.83	5,190	41.0
		O-O	35	15.9	9.29	325	35.0
JIT AREA	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0
SPRR TERMINAL	130 EMPLOYEES	H-W	182	24.8	17.94	3,266	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	23	14.7	8.59	198	35.0
		O-W	228	21.7	14.83	3,381	41.0
		O-O	23	15.9	9.29	214	35.0
UP RAIL TERMINAL	82 EMPLOYEES	H-W	115	24.8	17.94	2,064	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	14	14.7	8.59	120	35.0
		O-W	144	21.7	14.83	2,135	41.0
		O-O	14	15.9	9.29	130	35.0

TABLE N-19. VEHICLE TRAVEL SUMMARY, NO ACTION ALTERNATIVE

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	1,835 EMPLOYEES	H-W	2,569	24.8	17.94	46,097	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	321	14.7	8.59	2,758	35.0
		O-W	3,212	21.7	14.83	47,629	41.0
		O-O	321	15.9	9.29	2,983	35.0
ON-SITE TRUCK TRIPS	469 ACRES	O-O	589	6.2	1.86	1,096	18.0
BAY AREA TRUCK TRIPS	469 ACRES	O-O	9,815	28.9	16.11	158,099	33.5
LONG DISTANCE TRUCK TRIPS	469 ACRES	O-O	4,021	77.5	48.44	194,767	37.5
PORT OF RICHMOND TRUCKS	469 ACRES	O-O	23	18.0	11.25	259	37.5
.....							
TOTALS:		H-W	3,846	24.8	17.94	69,012	43.5
		H-S	0	0.0	0.00	0	0.0
		H-O	481	14.8	8.59	4,133	34.9
		O-W	4,809	21.7	14.83	71,309	41.0
		O-O	14,929	40.6	24.03	358,690	35.5
			24,065	33.8	20.91	503,144	37.1

Notes: H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
VMT = vehicle miles traveled

TABLE N-20. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, NO ACTION ALTERNATIVE

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (lbs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (lbs/day)
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	H-W	17.94	12,561	0.26	0.54	3.11	3.61	4.68	7.7	14.8	86.1	99.9	129.5
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	756	0.29	0.53	3.11	3.97	5.13	0.6	0.9	5.2	6.6	8.6
		O-W	14.83	12,975	0.23	0.52	3.11	3.34	4.25	7.4	15.0	88.9	95.5	121.5
		O-O	9.29	818	0.21	0.47	3.11	2.94	3.61	0.4	0.9	5.6	5.3	6.5
FISCO AREAS 4 & 5	200 EMPLOYEES	H-W	17.94	5,024	0.26	0.54	3.11	3.61	4.68	3.1	5.9	34.4	40.0	51.8
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	301	0.29	0.53	3.11	3.97	5.13	0.2	0.3	2.1	2.6	3.4
		O-W	14.83	5,190	0.23	0.52	3.11	3.34	4.25	3.0	6.0	35.6	38.2	48.6
		O-O	9.29	325	0.21	0.47	3.11	2.94	3.61	0.2	0.3	2.2	2.1	2.6
JIT AREA	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
SPRR TERMINAL	130 EMPLOYEES	H-W	17.94	3,266	0.26	0.54	3.11	3.61	4.68	2.0	3.9	22.4	26.0	33.7
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	198	0.29	0.53	3.11	3.97	5.13	0.1	0.2	1.4	1.7	2.2
		O-W	14.83	3,381	0.23	0.52	3.11	3.34	4.25	1.9	3.9	23.2	24.9	31.7
		O-O	9.29	214	0.21	0.47	3.11	2.94	3.61	0.1	0.2	1.5	1.4	1.7
UP RAIL TERMINAL	82 EMPLOYEES	H-W	17.94	2,064	0.26	0.54	3.11	3.61	4.68	1.3	2.4	14.1	16.4	21.3
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	120	0.29	0.53	3.11	3.97	5.13	0.1	0.1	0.8	1.1	1.4
		O-W	14.83	2,135	0.23	0.52	3.11	3.34	4.25	1.2	2.5	14.6	15.7	20.0
		O-O	9.29	130	0.21	0.47	3.11	2.94	3.61	0.1	0.1	0.9	0.8	1.0

TABLE N-20. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, NO ACTION ALTERNATIVE

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (lbs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (lbs/day)
MARINE TERMINAL AREAS	1,835 EMPLOYEES	H-W	17.94	46,097	0.26	0.54	3.11	3.61	4.68	28.2	54.4	316.0	366.8	475.3
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	2,758	0.29	0.53	3.11	3.97	5.13	2.1	3.2	18.9	24.1	31.2
		O-W	14.83	47,629	0.23	0.52	3.11	3.34	4.25	27.1	54.9	326.5	350.7	446.1
		O-O	9.29	2,983	0.21	0.47	3.11	2.94	3.61	1.6	3.1	20.4	19.3	23.8
ON-SITE TRUCK TRIPS	469 ACRES	O-O	1.86	1,096	2.97	11.14	4.53	14.32	14.42	7.2	26.9	10.9	34.6	34.8
BAY AREA TRUCK TRIPS	469 ACRES	O-O	16.11	158,099	1.82	10.46	4.53	8.15	8.21	635.5	3,644.6	1,577.5	2,840.5	2,860.2
LONG DISTANCE TRUCK TRIPS	469 ACRES	O-O	48.44	194,767	1.67	10.84	4.53	7.59	7.64	731.3	4,653.0	1,943.4	3,259.5	3,282.5
PORT OF RICHMOND TRUCKS	469 ACRES	O-O	11.25	259	1.67	10.84	4.53	7.59	7.64	1.0	6.2	2.6	4.3	4.4
.....			
TOTALS				20.91	503,144	.....	.....	.....	.....	1,463.3	8,503.9	4,555.3	7,278.3	7,643.8

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE N-21. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, NO ACTION ALTERNATIVE AND EMISSION RATES FOR 2010

Land Use	Amount of Development	Net Daily Vehicle Trip Generation			Daily VMT Estimate	Average Summer Day Traffic-Related Ozone Precursor Emissions (pounds per day)			Average Daily Exhaust Plus Entrained PM10 Emissions (pounds per day)		Average Daily Traffic-Related Carbon Monoxide Emissions (pounds per day)	
		Internal Trips	External Trips	Total Trips		ROG	NOx	PM10	per day	Summer	Winter	
FISCO AREAS 1, 2, & 3	500 EMPLOYEES	0	1,751	1,751	27,109	16.1	31.5	185.8		207.4	266.1	
FISCO AREAS 4 & 5	200 EMPLOYEES	0	700	700	10,840	6.4	12.6	74.3		82.9	106.4	
JIT AREA	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0		0.0	0.0	
SPRR TERMINAL	130 EMPLOYEES	0	456	456	7,058	4.2	8.2	48.4		54.0	69.3	
UP RAIL TERMINAL	82 EMPLOYEES	0	287	287	4,449	2.6	5.2	30.5		34.0	43.7	
MARINE TERMINAL AREAS	1,835 EMPLOYEES	0	6,423	6,423	99,467	59.0	115.7	681.8		761.0	976.4	
ON-SITE TRUCK TRIPS	469 ACRES	589	0	589	1,096	7.2	26.9	10.9		34.6	34.8	
BAY AREA TRUCK TRIPS	469 ACRES	0	9,815	9,815	158,099	635.5	3,644.6	1,577.5		2,840.5	2,860.2	
LONG DISTANCE TRUCK TRIPS	469 ACRES	0	4,021	4,021	194,767	731.3	4,653.0	1,943.4		3,259.5	3,282.5	
PORT OF RICHMOND TRUCKS	469 ACRES	0	23	23	259	1.0	6.2	2.6		4.3	4.4	
Auto Trips:		0	9,617	9,617	148,924	88.3	173.2	1,020.8		1,139.3	1,461.9	
Truck Trips:		589	13,859	14,448	354,221	1,375.0	8,330.7	3,534.5		6,139.0	6,181.9	
Total		589	23,476	24,065	503,144	1,463.3	8,503.9	4,555.3		7,278.3	7,643.8	

Notes: VMT = vehicle miles traveled
 ROG = reactive organic compounds
 NOx = nitrogen oxides
 PM10 = inhalable particulate matter
 Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips

TABLE N-22. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, NO ACTION ALTERNATIVE

Land Use	Annual Vehicle Trips	Annual VMT	Estimated Annual Vehicle Emissions (Tons Per Year) For No Action				
			ROG	NOx	CO	SOx	PM10
FISCO AREAS 1, 2, & 3	437,750	6,777,324	2.01	3.94	28.37	0.22	23.23
FISCO AREAS 4 & 5	175,000	2,710,035	0.80	1.58	11.34	0.09	9.29
JIT AREA	0	0	0.00	0.00	0.00	0.00	0.00
SPRR TERMINAL	114,000	1,764,494	0.52	1.03	7.39	0.06	6.05
UP RAIL TERMINAL	71,750	1,112,300	0.33	0.65	4.66	0.04	3.81
MARINE TERMINAL AREAS	1,605,750	24,866,796	7.37	14.46	104.10	0.82	85.22
ON-SITE TRUCK TRIPS	147,250	273,885	0.90	3.36	4.33	0.19	1.37
BAY AREA TRUCK TRIPS	2,453,750	39,524,801	79.44	455.57	355.88	27.88	197.19
LONG DISTANCE TRUCK TRIPS	1,005,250	48,691,797	91.42	581.63	408.40	34.35	242.93
PORT OF RICHMOND TRUCKS	5,750	64,688	0.12	0.77	0.54	0.05	0.32
	-----	-----	-----	-----	-----	-----	-----
Autos	2,404,250	37,230,951	11.0	21.6	155.9	1.2	127.6
Trucks	3,612,000	88,555,170	171.9	1,041.3	769.2	62.5	441.8
	-----	-----	-----	-----	-----	-----	-----
Total	6,016,250	125,786,121	182.9	1,063.0	925.0	63.7	569.4

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE N-23. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE A

Land Use or Trip Generation Category	Trip Estimate Basis	Base Trip Generation		Vehicle Rate	P/A Trip Rate Splits		Base Trip Volume		Productions		Attractions		Number of Internal Trip Attractions		Internal/ External Trips		Net Trips Generated		Trip Rate Adjusted Factor	
		Rate	Rate		Productions	Attractions	Volume	Volume	Internal	W Internal	W Internal	Origins	Internal	Internal	Trips	Trips	Generated	Generated	Adjusted	Factor
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0%	0%	0%	0	0	0	0	0	0	0.0	0.0%
FISCO AREAS 4 & 5	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0%	0%	0%	0	0	0	0	0	0	0.0	0.0%
JIT AREA	360 EMPLOYEES	3.50	0.6	0.6	10%	90%	1,260	0	0%	0%	0%	0%	0	0	1,260	1,260	0	0	3.5	0.0%
SPRR TERMINAL	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0%	0%	0%	0	0	0	0	0	0	0.0	0.0%
UP RAIL TERMINAL	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0%	0%	0%	0	0	0	0	0	0	0.0	0.0%
MARINE TERMINAL AREAS	2,853 EMPLOYEES	3.50	0.6	0.6	10%	90%	9,986	0	0%	0%	0%	0%	0	0	9,986	9,986	0	0	3.5	0.0%
ON-SITE TRUCK TRIPS	729 ACRES	8.12	0.0	0.0	50%	50%	5,916	0	0%	0%	0%	0%	0	0	5,916	5,916	0	0	8.1	0.0%
BAY AREA TRUCK TRIPS	729 ACRES	14.84	0.0	0.0	50%	50%	10,816	0	0%	0%	0%	0%	0	0	10,816	10,816	0	0	14.8	0.0%
LONG DISTANCE TRUCK TRIPS	729 ACRES	6.08	0.0	0.0	50%	50%	4,431	0	0%	0%	0%	0%	0	0	4,431	4,431	0	0	6.1	0.0%
TOTALS							32,409	0							32,409	32,409	0	0		0.0%

Notes: Employment estimates by subarea taken from traffic modeling analyses performed by Dowling & Associates.

Average daily employee trip rate estimate provided by Jordan Woodman Dobson.

Average daily truck trip rates are back calculated from peak week truck trip estimates provided by Jordan Woodman Dobson; average daily truck trips are estimated to be 80% of peak week trips for marine terminals and 84% of peak week trips for rail terminals.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

Production/attraction splits reflect the origin of a round trip.

Production/attraction split values and internal origin/destination percentages must balance internal productions with internal attractions.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

TABLE N-24. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE A

Land Use	Trip Estimate Basis	Trip Purpose	Percent of Net Trips	Net Trip Rates	TCM Program Effect	Adjusted Net Trip Rate	Adjusted Net Trips	Overall TCM Effectiveness	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (mph)				
										15	25	35	45	55
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0	0	24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0	0	12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0	0	14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0	0	21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0	0	15.93	10.0%	25.0%	35.0%	15.0%	15.0%
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0	0	24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0	0	12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0	0	14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0	0	21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0	0	15.93	10.0%	25.0%	35.0%	15.0%	15.0%
JIT AREA	360 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	504	0	24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0	0	12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	63	0	14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	630	0	21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	63	0	15.93	10.0%	25.0%	35.0%	15.0%	15.0%
SPRR TERMINAL	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0	0	24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0	0	12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0	0	14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0	0	21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0	0	15.93	10.0%	25.0%	35.0%	15.0%	15.0%
UP RAIL TERMINAL	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0	0	24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0	0	12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0	0	14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0	0	21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0	0	15.93	10.0%	25.0%	35.0%	15.0%	15.0%

TABLE N-24. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE A

Land Use	Trip Estimate Basis	Trip Purpose	Percent of Net Trips	Net Trip Rates	TCM Program Effect	Adjusted Trip Rate	Adjusted Net Trips	Overall TCM Effectiveness	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (mph)				
										15	25	35	45	55
MARINE TERMINAL AREAS	2,853 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	3,994		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	499		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	4,993		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	499		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
ON-SITE TRUCK TRIPS	729 ACRES	O-O	100.0%	8.1	0%	8.1	5,916		6.20	75.0%	20.0%	5.0%	0.0%	0.0%
BAY AREA TRUCK TRIPS	729 ACRES	O-O	100.0%	14.8	0%	14.8	10,816		28.85	15.0%	25.0%	30.0%	20.0%	10.0%
LONG DISTANCE TRUCK TRIPS	729 ACRES	O-O	100.0%	6.1	0%	6.1	4,431		77.50	10.0%	20.0%	25.0%	25.0%	20.0%
TOTALS							32,408	0.0%						

Notes:

H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
TCM = transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE N-25. VEHICLE TRAVEL SUMMARY, ALTERNATIVE A

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0
JIT AREA	360 EMPLOYEES	H-W	504	24.8	17.94	9,044	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	63	14.7	8.59	541	35.0
		O-W	630	21.7	14.83	9,342	41.0
		O-O	63	15.9	9.29	585	35.0
SPRR TERMINAL	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0
UP RAIL TERMINAL	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0

TABLE N-25. VEHICLE TRAVEL SUMMARY, ALTERNATIVE A

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,853 EMPLOYEES	H-W	3,994	24.8	17.94	71,667	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	499	14.7	8.59	4,288	35.0
		O-W	4,993	21.7	14.83	74,038	41.0
		O-O	499	15.9	9.29	4,637	35.0
ON-SITE TRUCK TRIPS	729 ACRES	O-O	5,916	6.2	1.86	11,004	18.0
BAY AREA TRUCK TRIPS	729 ACRES	O-O	10,816	28.9	16.11	174,223	33.5
LONG DISTANCE TRUCK TRIPS	729 ACRES	O-O	4,431	77.5	48.44	214,627	37.5
.....							
TOTALS:							
		H-W	4,498	24.8	17.94	80,711	43.5
		H-S	0	0.0	0.00	0	0.0
		H-O	562	14.8	8.59	4,829	34.9
		O-W	5,623	21.7	14.83	83,380	41.0
		O-O	21,725	32.3	18.65	405,076	34.7
		
			32,408	29.1	17.71	573,996	36.5

Notes: H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
VMT = vehicle miles traveled

TABLE N-26. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE A

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (lbs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (lbs/day)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
JIT AREA	360 EMPLOYEES	H-W	17.94	9,044	0.26	0.54	3.11	3.61	4.68	5.5	10.7	62.0	72.0	93.3
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	541	0.29	0.53	3.11	3.97	5.13	0.4	0.6	3.7	4.7	6.1
		O-W	14.83	9,342	0.23	0.52	3.11	3.34	4.25	5.3	10.8	64.0	68.8	87.5
		O-O	9.29	585	0.21	0.47	3.11	2.94	3.61	0.3	0.6	4.0	3.8	4.7
SPRR TERMINAL	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0

TABLE N-26. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE A

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (lbs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (lbs/day)
MARINE TERMINAL AREAS	2,853 EMPLOYEES	H-W	17.94	71,667	0.26	0.54	3.11	3.61	4.68	43.8	84.6	491.2	570.3	739.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	4,288	0.29	0.53	3.11	3.97	5.13	3.2	5.0	29.4	37.5	48.5
		O-W	14.83	74,038	0.23	0.52	3.11	3.34	4.25	42.2	85.3	507.5	545.2	693.5
		O-O	9.29	4,637	0.21	0.47	3.11	2.94	3.61	2.5	4.9	31.8	30.1	36.9
ON-SITE TRUCK TRIPS	729 ACRES	O-O	1.86	11,004	2.97	11.14	4.53	14.32	14.42	72.5	270.4	109.8	347.4	349.8
BAY AREA TRUCK TRIPS	729 ACRES	O-O	16.11	174,223	1.82	10.46	4.53	8.15	8.21	700.3	4,016.3	1,738.4	3,130.2	3,151.9
LONG DISTANCE TRUCK TRIPS	729 ACRES	O-O	48.44	214,627	1.67	10.84	4.53	7.59	7.64	805.9	5,127.5	2,141.6	3,591.9	3,617.2
TOTALS			17.71	573,996						1,681.9	9,616.6	5,183.4	8,401.7	8,828.4

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE N-27. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE A AND EMISSION RATES FOR 2010

Land Use	Amount of Development	Net Daily Vehicle Trip Generation			Total Trips	Daily VMT Estimate	Average Summer Day Traffic-Related Ozone Precursor Emissions (pounds per day)			Average Daily Exhaust Plus Entrained PM10 Emissions (pounds per day)			Average Daily Traffic-Related Carbon Monoxide Emissions (pounds per day)	
		Internal Trips	External Trips				ROG	NOx					Summer	Winter
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JIT AREA	360 EMPLOYEES	0	1,260	1,260	1,260	19,512	11.6	22.7	133.7	149.3	191.5	149.3	191.5	191.5
SPRR TERMINAL	0 EMPLOYEES	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MARINE TERMINAL AREAS	2,853 EMPLOYEES	0	9,985	9,985	9,985	154,630	91.7	179.8	1,059.9	1,183.0	1,518.0	1,183.0	1,518.0	1,518.0
ON-SITE TRUCK TRIPS	729 ACRES	5,916	0	5,916	5,916	11,004	72.5	270.4	109.8	347.4	349.8	347.4	349.8	349.8
BAY AREA TRUCK TRIPS	729 ACRES	0	10,816	10,816	10,816	174,223	700.3	4,016.3	1,738.4	3,130.2	3,151.9	3,130.2	3,151.9	3,151.9
LONG DISTANCE TRUCK TRIPS	729 ACRES	0	4,431	4,431	4,431	214,627	805.9	5,127.5	2,141.6	3,591.9	3,617.2	3,591.9	3,617.2	3,617.2
Auto Trips:		0	11,245	11,245	11,245	174,142	103.3	202.5	1,193.7	1,332.2	1,709.5	1,332.2	1,709.5	1,709.5
Truck Trips:		5,916	15,247	21,163	21,163	399,854	1,578.7	9,414.1	3,989.8	7,069.5	7,118.9	7,069.5	7,118.9	7,118.9
Total		5,916	26,492	32,408	32,408	573,996	1,681.9	9,616.6	5,183.4	8,401.7	8,828.4	8,401.7	8,828.4	8,828.4

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

TABLE N-28. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE A

Land Use	Annual Vehicle Trips	Annual VMT	Estimated Annual Vehicle Emissions (Tons Per Year) For Alternative A				
			ROG	NOx	CO	SOx	PM10
FISCO AREAS 1, 2, & 3	0	0	0.00	0.00	0.00	0.00	0.00
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	315,000	4,878,064	1.45	2.84	20.42	0.16	16.72
SPRR TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
UP RAIL TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
MARINE TERMINAL AREAS	2,496,250	38,657,455	11.46	22.48	161.83	1.28	132.49
ON-SITE TRUCK TRIPS	1,479,000	2,750,940	9.06	33.80	43.52	1.94	13.72
BAY AREA TRUCK TRIPS	2,704,000	43,555,807	87.54	502.03	392.18	30.73	217.30
LONG DISTANCE TRUCK TRIPS	1,107,750	53,656,641	100.74	640.94	450.04	37.85	267.70
	-----	-----	-----	-----	-----	-----	-----
Autos	2,811,250	43,535,519	12.9	25.3	182.2	1.4	149.2
Trucks	5,290,750	99,963,387	197.3	1,176.8	885.7	70.5	498.7
	-----	-----	-----	-----	-----	-----	-----
Total	8,102,000	143,498,906	210.2	1,202.1	1,068.0	72.0	647.9

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE N-29. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE B

Land Use or Trip Generation Category	Trip Estimate Basis	Base Trip Generation		Vehicle Rate	P/A Trip Rate Splits		Base Trip Volume	% Productions		Number of Internal Trip Productions	% Attractions		Number of Internal Trip Attractions	Internal/ External Trips	Net Trips Generated	Adjusted Trip Rate	Trip Rate Adjustment Factor
		Rate	Rate		Productions	Attractions		W Internal Destinations	W Internal Origins								
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	3.50	0.6	0.6	10%	90%	1,400	0%	0%	0	0%	0%	0	1,400	1,400	3.5	0.0%
FISCO AREAS 4 & 5	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0%	0%	0	0%	0%	0	0	0	0.0	0.0%
JIT AREA	167 EMPLOYEES	3.50	0.6	0.6	10%	90%	585	0%	0%	0	0%	0%	0	585	585	3.5	0.0%
SPRR TERMINAL	150 EMPLOYEES	3.50	0.6	0.6	10%	90%	525	0%	0%	0	0%	0%	0	525	525	3.5	0.0%
UP RAIL TERMINAL	67 EMPLOYEES	3.50	0.6	0.6	10%	90%	235	0%	0%	0	0%	0%	0	235	235	3.5	0.0%
MARINE TERMINAL AREAS	2,312 EMPLOYEES	3.50	0.6	0.6	10%	90%	8,092	0%	0%	0	0%	0%	0	8,092	8,092	3.5	0.0%
ON-SITE TRUCK TRIPS	591 ACRES	3.91	0.0	0.0	50%	50%	2,313	0%	0%	0	0%	0%	0	2,313	2,313	3.9	0.0%
BAY AREA TRUCK TRIPS	591 ACRES	18.30	0.0	0.0	50%	50%	10,817	0%	0%	0	0%	0%	0	10,817	10,817	18.3	0.0%
LONG DISTANCE TRUCK TRIPS	591 ACRES	7.50	0.0	0.0	50%	50%	4,432	0%	0%	0	0%	0%	0	4,432	4,432	7.5	0.0%
TOTALS							28,399	0	0	0	0	0	0	28,399	28,399		0.0%

Notes: Employment estimates by subarea taken from traffic modeling analyses performed by Dowling & Associates.

Average daily employee trip rates are based on ITE trip generation manual rates for light industrial uses (Institute of Transportation Engineers, 1991).

Average daily truck trip rates are back calculated from peak week truck trip estimates provided by Jordan Woodman Dobson; average daily truck trips are estimated to be 80% of peak week trips for marine terminals and 84% of peak week trips for rail terminals.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

Production/attraction splits reflect the origin of a round trip.

Production/attraction split values and internal origin/destination percentages must balance internal productions with internal attractions.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

TABLE N-30. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE B

Land Use	Trip Estimate Basis	Trip Purpose	Percent of Net Trips	Net Trip Rates	TCM Program Effect	Adjusted Net Trip Rate	Adjusted Net Trips	Overall TCM Effectiveness	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (mph)				
										15	25	35	45	55
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	560		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	70		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	700		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	70		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
JIT AREA	167 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	234		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	29		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	293		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	29		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
SPRR TERMINAL	150 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	210		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	26		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	263		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	26		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
UP RAIL TERMINAL	67 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	94		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	12		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	118		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	12		15.93	10.0%	25.0%	35.0%	15.0%	15.0%

TABLE N-30. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE B

Land Use	Trip Estimate Basis	Trip Purpose	Percent of Net Trips	Net Trip Rates	TCM Program Effect	Adjusted Net Trip Rate	Adjusted Net Trips	Overall TCM Effectiveness	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (mph)				
										15	25	35	45	55
MARINE TERMINAL AREAS	2,312 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	3,237		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	405		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	4,046		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	405		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
ON-SITE TRUCK TRIPS	591 ACRES	O-O	100.0%	3.9	0%	3.9	2,313		6.20	75.0%	20.0%	5.0%	0.0%	0.0%
BAY AREA TRUCK TRIPS	591 ACRES	O-O	100.0%	18.3	0%	18.3	10,817		28.85	15.0%	25.0%	30.0%	20.0%	10.0%
LONG DISTANCE TRUCK TRIPS	591 ACRES	O-O	100.0%	7.5	0%	7.5	4,432		77.50	10.0%	20.0%	25.0%	25.0%	20.0%
							28,401	0.0%						
TOTALS														

Notes: H-W = home-work trips

H-S = home-shopping trips

H-O = home-other trips

O-W = other-work trips

O-O = other-other trips

TCM = transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE N-31. VEHICLE TRAVEL SUMMARY, ALTERNATIVE B

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	H-W	560	24.8	17.94	10,049	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	70	14.7	8.59	601	35.0
		O-W	700	21.7	14.83	10,380	41.0
		O-O	70	15.9	9.29	650	35.0
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0
JIT AREA	167 EMPLOYEES	H-W	234	24.8	17.94	4,199	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	29	14.7	8.59	249	35.0
		O-W	293	21.7	14.83	4,345	41.0
		O-O	29	15.9	9.29	269	35.0
SPRR TERMINAL	150 EMPLOYEES	H-W	210	24.8	17.94	3,768	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	26	14.7	8.59	223	35.0
		O-W	263	21.7	14.83	3,900	41.0
		O-O	26	15.9	9.29	242	35.0
UP RAIL TERMINAL	67 EMPLOYEES	H-W	94	24.8	17.94	1,687	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	12	14.7	8.59	103	35.0
		O-W	118	21.7	14.83	1,750	41.0
		O-O	12	15.9	9.29	112	35.0

TABLE N-31. VEHICLE TRAVEL SUMMARY, ALTERNATIVE B

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,312 EMPLOYEES	H-W H-S H-O O-W O-O	3,237 0 405 4,046 405	24.8 12.5 14.7 21.7 15.9	17.94 7.40 8.59 14.83 9.29	58,084 0 3,480 59,995 3,763	43.5 35.5 35.0 41.0 35.0
ON-SITE TRUCK TRIPS	591 ACRES	O-O	2,313	6.2	1.86	4,302	18.0
BAY AREA TRUCK TRIPS	591 ACRES	O-O	10,817	28.9	16.11	174,239	33.5
LONG DISTANCE TRUCK TRIPS	591 ACRES	O-O	4,432	77.5	48.44	214,675	37.5
.....							
TOTALS:		H-W H-S H-O O-W O-O	4,335 0 542 5,420 18,104	24.8 0.0 14.8 21.7 37.5	17.94 0.00 8.59 14.83 22.00	77,786 0 4,657 80,370 398,253	43.5 0.0 34.9 41.0 35.2
			28,401	32.1	19.76	561,066	36.9

Notes: H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
VMT = vehicle miles traveled

TABLE N-32. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE B

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (lbs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (lbs/day)
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	H-W	17.94	10,049	0.26	0.54	3.11	3.61	4.68	6.1	11.9	68.9	80.0	103.6
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	601	0.29	0.53	3.11	3.97	5.13	0.4	0.7	4.1	5.3	6.8
		O-W	14.83	10,380	0.23	0.52	3.11	3.34	4.25	5.9	12.0	71.1	76.4	97.2
		O-O	9.29	650	0.21	0.47	3.11	2.94	3.61	0.4	0.7	4.5	4.2	5.2
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
JIT AREA	167 EMPLOYEES	H-W	17.94	4,199	0.26	0.54	3.11	3.61	4.68	2.6	5.0	28.8	33.4	43.3
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	249	0.29	0.53	3.11	3.97	5.13	0.2	0.3	1.7	2.2	2.8
		O-W	14.83	4,345	0.23	0.52	3.11	3.34	4.25	2.5	5.0	29.8	32.0	40.7
		O-O	9.29	269	0.21	0.47	3.11	2.94	3.61	0.1	0.3	1.8	1.7	2.1
SPRR TERMINAL	150 EMPLOYEES	H-W	17.94	3,768	0.26	0.54	3.11	3.61	4.68	2.3	4.4	25.8	30.0	38.9
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	223	0.29	0.53	3.11	3.97	5.13	0.2	0.3	1.5	2.0	2.5
		O-W	14.83	3,900	0.23	0.52	3.11	3.34	4.25	2.2	4.5	26.7	28.7	36.5
		O-O	9.29	242	0.21	0.47	3.11	2.94	3.61	0.1	0.3	1.7	1.6	1.9
UP RAIL TERMINAL	67 EMPLOYEES	H-W	17.94	1,687	0.26	0.54	3.11	3.61	4.68	1.0	2.0	11.6	13.4	17.4
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	103	0.29	0.53	3.11	3.97	5.13	0.1	0.1	0.7	0.9	1.2
		O-W	14.83	1,750	0.23	0.52	3.11	3.34	4.25	1.0	2.0	12.0	12.9	16.4
		O-O	9.29	112	0.21	0.47	3.11	2.94	3.61	0.1	0.1	0.8	0.7	0.9

TABLE N-32. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE B

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (lbs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (lbs/day)
MARINE TERMINAL AREAS	2,312 EMPLOYEES	H-W	17.94	58,084	0.26	0.54	3.11	3.61	4.68	35.5	68.6	398.1	462.2	598.9
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
	0-W	H-O	8.59	3,480	0.29	0.53	3.11	3.97	5.13	2.6	4.0	23.9	30.4	39.4
		O-W	14.83	59,995	0.23	0.52	3.11	3.34	4.25	34.2	69.2	411.2	441.8	562.0
	0-0		9.29	3,763	0.21	0.47	3.11	2.94	3.61	2.1	3.9	25.8	24.4	30.0
ON-SITE TRUCK TRIPS	591 ACRES	0-0	1.86	4,302	2.97	11.14	4.53	14.32	14.42	28.3	105.7	42.9	135.8	136.7
BAY AREA TRUCK TRIPS	591 ACRES	0-0	16.11	174,239	1.82	10.46	4.53	8.15	8.21	700.4	4,016.6	1,738.6	3,130.5	3,152.2
LONG DISTANCE TRUCK TRIPS	591 ACRES	0-0	48.44	214,675	1.67	10.84	4.53	7.59	7.64	806.1	5,128.7	2,142.1	3,592.7	3,618.1
TOTALS			19.76	561,066						1,634.3	9,446.2	5,074.1	8,143.1	8,554.7

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = Inhalable particulate matter

CO = Carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE N-33. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE B AND EMISSION RATES FOR 2010

Land Use	Amount of Development	Net Daily Vehicle Trip Generation			Total Trips	Daily VMT Estimate	Average Summer Day Traffic-Related Ozone Precursor Emissions (pounds per day)			Average Daily Traffic-Related Carbon Monoxide Emissions (pounds per day)		
		Internal Trips	External Trips	Trips			ROG	NOx	PM10	Exhaust Plus Entrained	Summer	Winter
FISCO AREAS 1, 2, & 3	400 EMPLOYEES	0	1,400	1,400	1,400	21,680	12.9	25.2	148.6	165.9	212.8	
FISCO AREAS 4 & 5	0 EMPLOYEES	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	
JIT AREA	167 EMPLOYEES	0	585	585	585	9,062	5.4	10.5	62.1	69.3	89.0	
SPRR TERMINAL	150 EMPLOYEES	0	525	525	525	8,133	4.8	9.5	55.7	62.2	79.8	
UP RAIL TERMINAL	67 EMPLOYEES	0	236	236	236	3,651	2.2	4.2	25.0	27.9	35.8	
MARINE TERMINAL AREAS	2,312 EMPLOYEES	0	8,093	8,093	8,093	125,323	74.3	145.7	859.0	958.8	1,230.3	
ON-SITE TRUCK TRIPS	591 ACRES	2,313	0	2,313	2,313	4,302	28.3	105.7	42.9	135.8	136.7	
BAY AREA TRUCK TRIPS	591 ACRES	0	10,817	10,817	10,817	174,239	700.4	4,016.6	1,738.6	3,130.5	3,152.2	
LONG DISTANCE TRUCK TRIPS	591 ACRES	0	4,432	4,432	4,432	214,675	806.1	5,128.7	2,142.1	3,592.7	3,618.1	
Auto Trips:		0	10,839	10,839	10,839	167,849	99.5	195.2	1,150.5	1,284.1	1,647.7	
Truck Trips:		2,313	15,249	17,562	17,562	393,217	1,534.8	9,251.0	3,923.6	6,859.0	6,907.0	
Total		2,313	26,088	28,401	28,401	561,066	1,634.3	9,446.2	5,074.1	8,143.1	8,554.7	

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

TABLE N-34. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE B

Land Use	Annual Vehicle Trips	Annual VMT	Estimated Annual Vehicle Emissions (Tons Per Year) For Alternative B				
			ROG	NOx	CO	SOx	PM10
FISCO AREAS 1, 2, & 3	350,000	5,420,071	1.61	3.15	22.69	0.18	18.58
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	146,250	2,265,551	0.67	1.32	9.48	0.07	7.76
SPRR TERMINAL	131,250	2,033,262	0.60	1.18	8.51	0.07	6.97
UP RAIL TERMINAL	59,000	912,769	0.27	0.53	3.82	0.03	3.13
MARINE TERMINAL AREAS	2,023,250	31,330,695	9.29	18.22	131.16	1.04	107.38
ON-SITE TRUCK TRIPS	578,250	1,075,545	3.54	13.21	17.02	0.76	5.37
BAY AREA TRUCK TRIPS	2,704,250	43,559,834	87.55	502.08	392.21	30.73	217.32
LONG DISTANCE TRUCK TRIPS	1,108,000	53,668,750	100.76	641.08	450.14	37.86	267.76

Autos	2,709,750	41,962,348	12.4	24.4	175.7	1.4	143.8
Trucks	4,390,500	98,304,129	191.8	1,156.4	859.4	69.4	490.4

Total	7,100,250	140,266,477	204.3	1,180.8	1,035.0	70.7	634.3

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE N-35. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE C

Land Use or Trip Generation Category	Trip Estimate Basis	Base Trip Generation		Vehicle Rate	P/A Trip Rate Splits		Base Trip Volume		Productions		Attractions		Number of Internal Trip Attractions		Internal/ External Trips	Net Trips Generated	Adjusted Trip Rate	Trip Rate Adjustment Factor
		Rate	Rate		Productions	Attractions	Volume	Volume	Internal Productions	Internal Destinations	W Internal Origins	W Internal Destinations	Internal Attractions	Internal Attractions				
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0%	0%	0%	0	0	0	0	0.0	0.0%
FISCO AREAS 4 & 5	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0%	0%	0%	0	0	0	0	0.0	0.0%
JIT AREA	208 EMPLOYEES	3.50	0.6	0.6	10%	90%	728	728	0%	0%	0%	0%	0	728	728	728	3.5	0.0%
SPRR TERMINAL	210 EMPLOYEES	3.50	0.6	0.6	10%	90%	735	735	0%	0%	0%	0%	0	735	735	735	3.5	0.0%
UP RAIL TERMINAL	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0%	0%	0%	0	0	0	0	0.0	0.0%
MARINE TERMINAL AREAS	2,970 EMPLOYEES	3.50	0.6	0.6	10%	90%	10,395	10,395	0%	0%	0%	0%	0	10,395	10,395	10,395	3.5	0.0%
ON-SITE TRUCK TRIPS	759 ACRES	8.82	0.0	0.0	50%	50%	6,694	6,694	0%	0%	0%	0%	0	6,694	6,694	6,694	8.8	0.0%
BAY AREA TRUCK TRIPS	759 ACRES	14.25	0.0	0.0	50%	50%	10,819	10,819	0%	0%	0%	0%	0	10,819	10,819	10,819	14.3	0.0%
LONG DISTANCE TRUCK TRIPS	759 ACRES	5.84	0.0	0.0	50%	50%	4,433	4,433	0%	0%	0%	0%	0	4,433	4,433	4,433	5.8	0.0%
TOTALS							33,804	0							33,804	33,804		0.0%

Notes: Employment estimates by subarea taken from traffic modeling analyses performed by Dowling & Associates.

Average daily employee trip rates are based on ITE trip generation manual rates for light industrial uses (Institute of Transportation Engineers, 1991).

Average daily truck trip rates are back calculated from peak week truck trip estimates provided by Jordan Woodman Dobson; average daily truck trips are estimated to be 80% of peak week trips for marine terminals and 84% of peak week trips for rail terminals.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

Production/attraction splits reflect the origin of a round trip.

Production/attraction split values and internal origin/destination percentages must balance internal productions with internal attractions.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = Internal/external trips + 50% of internal productions + 50% of internal attractions.

TABLE N-36. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE C

Land Use	Trip Estimate Basis	Trip Purpose	Percent of Net Trips	Net Trip Rates	TCM Program Effect	Adjusted Net Trip Rate	Adjusted Net Trips	Overall TCM Effectiveness	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (mph)				
										15	25	35	45	55
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
JIT AREA	208 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	291		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	36		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	364		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	36		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
SPRR TERMINAL	210 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	294		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	37		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	368		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	37		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
UP RAIL TERMINAL	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0		15.93	10.0%	25.0%	35.0%	15.0%	15.0%

TABLE N-36. TRIP PURPOSE, TCH EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE C

Land Use	Trip Estimate Basis	Trip Purpose	Percent of Net Trips	Net Trip Rates	TCH Program Effect	Adjusted Net Trip Rate	Adjusted Net Trips	Overall TCH Effectiveness	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (mph)				
										15	25	35	45	55
MARINE TERMINAL AREAS	2,970 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	4,158		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	520		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	5,198		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	520		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
ON-SITE TRUCK TRIPS	759 ACRES	O-O	100.0%	8.8	0%	8.8	6,694		6.20	75.0%	20.0%	5.0%	0.0%	0.0%
BAY AREA TRUCK TRIPS	759 ACRES	O-O	100.0%	14.3	0%	14.3	10,819		28.85	15.0%	25.0%	30.0%	20.0%	10.0%
LONG DISTANCE TRUCK TRIPS	759 ACRES	O-O	100.0%	5.8	0%	5.8	4,433		77.50	10.0%	20.0%	25.0%	25.0%	20.0%
TOTALS							33,805	0.0%						

Notes: H-W = home-work trips

H-S = home-shopping trips

H-O = home-other trips

O-W = other-work trips

O-O = other-other trips

TCH = transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE N-37. VEHICLE TRAVEL SUMMARY, ALTERNATIVE C

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0
JIT AREA	208 EMPLOYEES	H-W	291	24.8	17.94	5,222	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	36	14.7	8.59	309	35.0
		O-W	364	21.7	14.83	5,398	41.0
		O-O	36	15.9	9.29	335	35.0
SPRR TERMINAL	210 EMPLOYEES	H-W	294	24.8	17.94	5,275	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	37	14.7	8.59	318	35.0
		O-W	368	21.7	14.83	5,457	41.0
		O-O	37	15.9	9.29	344	35.0
UP RAIL TERMINAL	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0

TABLE N-37. VEHICLE TRAVEL SUMMARY, ALTERNATIVE C

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE		MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
			DAILY TRIPS	TRIP PURPOSE				
MARINE TERMINAL AREAS	2,970 EMPLOYEES	H-W	4,158		24.8	17.94	74,610	43.5
		H-S	0		12.5	7.40	0	35.5
		H-O	520		14.7	8.59	4,468	35.0
		O-W	5,198		21.7	14.83	77,078	41.0
		O-O	520		15.9	9.29	4,832	35.0
ON-SITE TRUCK TRIPS	759 ACRES	O-O	6,694		6.2	1.86	12,451	18.0
BAY AREA TRUCK TRIPS	759 ACRES	O-O	10,819		28.9	16.11	174,272	33.5
LONG DISTANCE TRUCK TRIPS	759 ACRES	O-O	4,433		77.5	48.44	214,723	37.5
.....								
TOTALS:								
		H-W	4,743		24.8	17.94	85,107	43.5
		H-S	0		0.0	0.00	0	0.0
		H-O	593		14.8	8.59	5,095	34.9
		O-W	5,930		21.7	14.83	87,932	41.0
		O-O	22,539		31.4	18.06	406,956	34.6
		
			33,805		28.4	17.31	585,091	36.5

Notes: H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
VMT = vehicle miles traveled

TABLE N-38. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE C

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (lbs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (lbs/day)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
JIT AREA	208 EMPLOYEES	H-W	17.94	5,222	0.26	0.54	3.11	3.61	4.68	3.2	6.2	35.8	41.5	53.8
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	309	0.29	0.53	3.11	3.97	5.13	0.2	0.4	2.1	2.7	3.5
		O-W	14.83	5,398	0.23	0.52	3.11	3.34	4.25	3.1	6.2	37.0	39.7	50.6
		O-O	9.29	335	0.21	0.47	3.11	2.94	3.61	0.2	0.4	2.3	2.2	2.7
SPRR TERMINAL	210 EMPLOYEES	H-W	17.94	5,275	0.26	0.54	3.11	3.61	4.68	3.2	6.2	36.2	42.0	54.4
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	318	0.29	0.53	3.11	3.97	5.13	0.2	0.4	2.2	2.8	3.6
		O-W	14.83	5,457	0.23	0.52	3.11	3.34	4.25	3.1	6.3	37.4	40.2	51.1
		O-O	9.29	344	0.21	0.47	3.11	2.94	3.61	0.2	0.4	2.4	2.2	2.7
UP RAIL TERMINAL	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0

TABLE N-38. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE C

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (lbs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (lbs/day)
MARINE TERMINAL AREAS	2,970 EMPLOYEES	H-W	17.94	74,610	0.26	0.54	3.11	3.61	4.68	45.6	88.1	511.4	593.7	769.3
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	4,468	0.29	0.53	3.11	3.97	5.13	3.3	5.2	30.6	39.1	50.6
		O-W	14.83	77,078	0.23	0.52	3.11	3.34	4.25	43.9	88.9	528.3	567.6	722.0
		O-O	9.29	4,832	0.21	0.47	3.11	2.94	3.61	2.6	5.1	33.1	31.3	38.5
ON-SITE TRUCK TRIPS	759 ACRES	0-0	1.86	12,451	2.97	11.14	4.53	14.32	14.42	82.0	305.9	124.2	393.1	395.7
BAY AREA TRUCK TRIPS	759 ACRES	0-0	16.11	174,272	1.82	10.46	4.53	8.15	8.21	700.5	4,017.4	1,738.9	3,131.1	3,152.7
LONG DISTANCE TRUCK TRIPS	759 ACRES	0-0	48.44	214,723	1.67	10.84	4.53	7.59	7.64	806.3	5,129.8	2,142.5	3,593.5	3,618.9
TOTALS			17.31	585,091						1,697.7	9,666.7	5,264.5	8,522.6	8,970.2

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE N-39. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE C AND EMISSION RATES FOR 2010

Land Use	Amount of Development	Net Daily Vehicle Trip Generation			Average Summer Day Traffic-Related Ozone Precursor Emissions (pounds per day)			Average Daily Exhaust Plus Entrained PM10 Emissions (pounds per day)		Average Daily Traffic-Related Carbon Monoxide Emissions (pounds per day)	
		Internal Trips	External Trips	Total Trips	Daily VMT Estimate	ROG	NOx	PM10		Summer	Winter
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0		0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0		0.0	0.0
JIT AREA	208 EMPLOYEES	0	727	727	11,263	6.7	13.1	77.2		86.2	110.6
SPRR TERMINAL	210 EMPLOYEES	0	736	736	11,394	6.8	13.2	78.1		87.2	111.8
UP RAIL TERMINAL	0 EMPLOYEES	0	0	0	0	0.0	0.0	0.0		0.0	0.0
MARINE TERMINAL AREAS	2,970 EMPLOYEES	0	10,396	10,396	160,988	95.5	187.2	1,103.5		1,231.6	1,580.4
ON-SITE TRUCK TRIPS	759 ACRES	6,694	0	6,694	12,451	82.0	305.9	124.2		393.1	395.7
BAY AREA TRUCK TRIPS	759 ACRES	0	10,819	10,819	174,272	700.5	4,017.4	1,738.9		3,131.1	3,152.7
LONG DISTANCE TRUCK TRIPS	759 ACRES	0	4,433	4,433	214,723	806.3	5,129.8	2,142.5		3,593.5	3,618.9
Auto Trips:		0	11,859	11,859	183,645	108.9	213.6	1,258.8		1,404.9	1,802.8
Truck Trips		6,694	15,252	21,946	401,446	1,588.8	9,453.1	4,005.7		7,117.7	7,167.4
Total		6,694	27,111	33,805	585,091	1,697.7	9,666.7	5,264.5		8,522.6	8,970.2

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

TABLE N-40. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE C

Land Use	Annual Vehicle Trips	Annual VMT	Estimated Annual Vehicle Emissions (Tons Per Year) For Alternative C				
			ROG	NOx	CO	SOx	PM10
FISCO AREAS 1, 2, & 3	0	0	0.00	0.00	0.00	0.00	0.00
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	181,750	2,815,751	0.83	1.64	11.79	0.09	9.65
SPRR TERMINAL	184,000	2,848,509	0.84	1.66	11.92	0.09	9.76
UP RAIL TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
MARINE TERMINAL AREAS	2,599,000	40,246,997	11.93	23.40	168.48	1.33	137.94
ON-SITE TRUCK TRIPS	1,673,500	3,112,710	10.25	38.24	49.25	2.20	15.53
BAY AREA TRUCK TRIPS	2,704,750	43,567,888	87.56	502.17	392.29	30.74	217.36
LONG DISTANCE TRUCK TRIPS	1,108,250	53,680,859	100.78	641.23	450.25	37.87	267.82
	-----	-----	-----	-----	-----	-----	-----
Autos	2,964,750	45,911,257	13.6	26.7	192.2	1.5	157.3
Trucks	5,486,500	100,361,457	198.6	1,181.6	891.8	70.8	500.7
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Total	8,451,250	146,272,714	212.2	1,208.3	1,084.0	72.3	658.1

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE N-41. TRIP RATE CALCULATIONS WITH INTERNAL TRIP ADJUSTMENTS, ALTERNATIVE D

Land Use or Trip Generation Category	Trip Estimate Basis	Base Trip Generation		Vehicle Rate	P/A Trip Rate Splits		Base Trip Volume		Productions		Attractions		Internal Trip Productions		Internal Trip Attractions		Number of Internal Trip Attractions		Net Trips Generated	Trip Rate	
		Rate	Rate		Productions	Attractions	Volume	Volume	W Internal	W Internal	Origins	Destinations	Internal	Internal	Internal	Internal	Internal	Internal		Adjusted	Factor
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0	0%	0	0	0	0	0	0	0	0.0	0.0%	0.0%
FISCO AREAS 4 & 5	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0	0%	0	0	0	0	0	0	0	0.0	0.0%	0.0%
JIT AREA	343 EMPLOYEES	3.50	0.6	0.6	10%	90%	1,201	0	0%	0	0%	0	0	0	1,201	0	0	1,201	3.5	0.0%	0.0%
SPRR TERMINAL	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0	0%	0	0	0	0	0	0	0	0.0	0.0%	0.0%
UP RAIL TERMINAL	0 EMPLOYEES	0.00	0.0	0.0	10%	90%	0	0	0%	0	0%	0	0	0	0	0	0	0	0.0	0.0%	0.0%
MARINE TERMINAL AREAS	2,923 EMPLOYEES	3.50	0.6	0.6	10%	90%	10,231	0	0%	0	0%	0	0	0	10,231	0	0	10,231	3.5	0.0%	0.0%
ON-SITE TRUCK TRIPS	747 ACRES	8.56	0.0	0.0	50%	50%	6,394	0	0%	0	0%	0	0	0	6,394	0	0	6,394	8.6	0.0%	0.0%
BAY AREA TRUCK TRIPS	747 ACRES	14.47	0.0	0.0	50%	50%	10,812	0	0%	0	0%	0	0	0	10,812	0	0	10,812	14.5	0.0%	0.0%
LONG DISTANCE TRUCK TRIPS	747 ACRES	5.93	0.0	0.0	50%	50%	4,430	0	0%	0	0%	0	0	0	4,430	0	0	4,430	5.9	0.0%	0.0%
TOTALS							33,068	0									0	33,068			0.0%

Notes: Employment estimates by subarea taken from traffic modeling analyses performed by Dowling & Associates.

Average daily employee trip rates are based on ITE trip generation manual rates for light industrial uses (Institute of Transportation Engineers, 1991).

Average daily truck trip rates are back calculated from peak week truck trip estimates provided by Jordan Woodman Dobson; average daily truck trips are estimated to be 80% of peak week trips for marine terminals and 84% of peak week trips for rail terminals.

Bay Area truck trips represent 70.98% of the off-site truck trips; 29.02% of off-site truck trips are to or from locations outside the Bay Area.

The vehicle generation rate is used in the emissions analysis to compute diurnal and resting loss emissions from parked vehicles.

Production/attraction splits reflect the origin of a round trip.

Production/attraction split values and internal origin/destination percentages must balance internal productions with internal attractions.

Internal trip production/attraction balancing is not required by the trip generation approach used for this alternative.

Net trips generated = internal/external trips + 50% of internal productions + 50% of internal attractions.

TABLE N-42. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE D

Land Use	Trip Estimate Basis	Trip Purpose	Percent of Net Trips	Net Trip Rates	TCM Program Effect	Adjusted Net Trip Rate	Adjusted Net Trips	Overall TCM Effectiveness	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (mph)				
										15	25	35	45	55
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
JIT AREA	343 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	480		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.2	0%	0.2	60		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	601		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	60		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
SPRR TERMINAL	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0		15.93	10.0%	25.0%	35.0%	15.0%	15.0%
UP RAIL TERMINAL	0 EMPLOYEES	H-W	40.0%	0.0	0%	0.0	0		24.75	5.0%	10.0%	20.0%	25.0%	40.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%	20.0%
		H-O	5.0%	0.0	0%	0.0	0		14.73	10.0%	25.0%	35.0%	15.0%	15.0%
		O-W	50.0%	0.0	0%	0.0	0		21.70	5.0%	20.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.0	0%	0.0	0		15.93	10.0%	25.0%	35.0%	15.0%	15.0%

TABLE N-42. TRIP PURPOSE, TCM EFFECTS AND TRAVEL TIME DISAGGREGATIONS, ALTERNATIVE D

Land Use	Trip Estimate Basis	Trip Purpose	Percent of Net Trips	Net Trip Rates	TCM Program Effect	Adjusted Net Trip Rate	Adjusted Net Trips	Overall TCM Effectiveness	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (mph)			
										15	25	35	45
MARINE TERMINAL AREAS	2,923 EMPLOYEES	H-W	40.0%	1.4	0%	1.4	4,092		24.75	5.0%	10.0%	20.0%	25.0%
		H-S	0.0%	0.0	0%	0.0	0		12.50	10.0%	30.0%	25.0%	15.0%
		H-O	5.0%	0.2	0%	0.2	512		14.73	10.0%	25.0%	35.0%	15.0%
		O-W	50.0%	1.8	0%	1.8	5,116		21.70	5.0%	20.0%	20.0%	35.0%
		O-O	5.0%	0.2	0%	0.2	512		15.93	10.0%	25.0%	35.0%	15.0%
ON-SITE TRUCK TRIPS	747 ACRES	O-O	100.0%	8.6	0%	8.6	6,394		6.20	75.0%	20.0%	5.0%	0.0%
BAY AREA TRUCK TRIPS	747 ACRES	O-O	100.0%	14.5	0%	14.5	10,812		28.85	15.0%	25.0%	30.0%	20.0%
LONG DISTANCE TRUCK TRIPS	747 ACRES	O-O	100.0%	5.9	0%	5.9	4,430		77.50	10.0%	20.0%	25.0%	20.0%
TOTALS							33,069	0.0%					

Notes: H-W = home-work trips

H-S = home-shopping trips

H-O = home-other trips

O-W = other-work trips

O-O = other-other trips

TCM = transportation control measures

Mean trip durations were derived from estimated travel time frequency distributions for home-work, home-shopping, home-other, other-work, and other-other trips, recognizing employee residency patterns plus travel times and distances between communities in the Bay Area.

Vehicle speed distributions were estimated from general road network features of the San Francisco Bay Area.

TABLE N-43. VEHICLE TRAVEL SUMMARY, ALTERNATIVE D

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0
JIT AREA	343 EMPLOYEES	H-W	480	24.8	17.94	8,613	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	60	14.7	8.59	516	35.0
		O-W	601	21.7	14.83	8,912	41.0
		O-O	60	15.9	9.29	558	35.0
SPRR TERMINAL	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0
UP RAIL TERMINAL	0 EMPLOYEES	H-W	0	24.8	17.94	0	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	0	14.7	8.59	0	35.0
		O-W	0	21.7	14.83	0	41.0
		O-O	0	15.9	9.29	0	35.0

TABLE N-43. VEHICLE TRAVEL SUMMARY, ALTERNATIVE D

LAND USE	TRIP ESTIMATE BASIS	TRIP PURPOSE	AVERAGE DAILY TRIPS	MEAN TRIP DURATION (MINUTES)	AVERAGE DISTANCE (MILES)	DAILY VMT BY TRIP PURPOSE	AVERAGE TRAVEL SPEED (MPH)
MARINE TERMINAL AREAS	2,923 EMPLOYEES	H-W	4,092	24.8	17.94	73,426	43.5
		H-S	0	12.5	7.40	0	35.5
		H-O	512	14.7	8.59	4,399	35.0
		O-W	5,116	21.7	14.83	75,862	41.0
		O-O	512	15.9	9.29	4,758	35.0
ON-SITE TRUCK TRIPS	747 ACRES	O-O	6,394	6.2	1.86	11,893	18.0
BAY AREA TRUCK TRIPS	747 ACRES	O-O	10,812	28.9	16.11	174,159	33.5
LONG DISTANCE TRUCK TRIPS	747 ACRES	O-O	4,430	77.5	48.44	214,578	37.5
.....							
TOTALS:		H-W	4,572	24.8	17.94	82,039	43.5
		H-S	0	0.0	0.00	0	0.0
		H-O	572	14.8	8.59	4,915	34.9
		O-W	5,717	21.7	14.83	84,774	41.0
		O-O	22,208	31.7	18.28	405,945	34.6
			33,069	28.7	17.47	577,672	36.5

Notes: H-W = home-work trips
H-S = home-shopping trips
H-O = home-other trips
O-W = other-work trips
O-O = other-other trips
VMT = vehicle miles traveled

TABLE N-44. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE D

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust		Total PM10 Emission Rate (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (lbs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (lbs/day)
					Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)								
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
JIT AREA	343 EMPLOYEES	H-W	17.94	8,613	0.26	0.54	3.11	3.61	4.68	5.3	10.2	59.0	68.5	88.8
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	516	0.29	0.53	3.11	3.97	5.13	0.4	0.6	3.5	4.5	5.8
		O-W	14.83	8,912	0.23	0.52	3.11	3.34	4.25	5.1	10.3	61.1	65.6	83.5
		O-O	9.29	558	0.21	0.47	3.11	2.94	3.61	0.3	0.6	3.8	3.6	4.4
SPRRR TERMINAL	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	H-W	17.94	0	0.26	0.54	3.11	3.61	4.68	0.0	0.0	0.0	0.0	0.0
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	0	0.29	0.53	3.11	3.97	5.13	0.0	0.0	0.0	0.0	0.0
		O-W	14.83	0	0.23	0.52	3.11	3.34	4.25	0.0	0.0	0.0	0.0	0.0
		O-O	9.29	0	0.21	0.47	3.11	2.94	3.61	0.0	0.0	0.0	0.0	0.0

TABLE N-44. SUMMARY OF VMT AND TRAFFIC-RELATED VEHICLE EMISSIONS, ALTERNATIVE D

Land Use	Trip Estimate Basis	Trip Purpose	Average Distance (miles)	VMT by Category	Exhaust ROG Rate (gm/mile)	Exhaust NOx Rate (gm/mile)	Total PM10 (gm/mile)	Summer CO Rate (gm/mile)	Winter CO Rate (gm/mile)	ROG Emissions (lbs/day)	NOx Emissions (lbs/day)	PM10 Emissions (lbs/day)	Summer CO Emissions (lbs/day)	Winter CO Emissions (lbs/day)
MARINE TERMINAL AREAS	2,923 EMPLOYEES	H-W	17.94	73,426	0.26	0.54	3.11	3.61	4.68	44.8	86.7	503.3	584.2	757.1
		H-S	7.40	0	0.28	0.55	3.11	3.86	4.95	0.0	0.0	0.0	0.0	0.0
		H-O	8.59	4,399	0.29	0.53	3.11	3.97	5.13	3.3	5.1	30.2	38.5	49.8
		O-W	14.83	75,862	0.23	0.52	3.11	3.34	4.25	43.2	87.4	520.0	558.6	710.6
		O-O	9.29	4,758	0.21	0.47	3.11	2.94	3.61	2.6	5.0	32.6	30.8	37.9
ON-SITE TRUCK TRIPS	747 ACRES	O-O	1.86	11,893	2.97	11.14	4.53	14.32	14.42	78.3	292.2	118.7	375.5	378.0
BAY AREA TRUCK TRIPS	747 ACRES	O-O	16.11	174,159	1.82	10.46	4.53	8.15	8.21	700.0	4,014.8	1,737.8	3,129.0	3,150.7
LONG DISTANCE TRUCK TRIPS	747 ACRES	O-O	48.44	214,578	1.67	10.84	4.53	7.59	7.64	805.7	5,126.3	2,141.1	3,591.1	3,616.4
TOTALS			17.47	577,672						1,689.1	9,639.2	5,211.1	8,450.0	8,883.1

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

CO = carbon monoxide

Average trip distances are calculated from mean trip durations and the distribution of travel time by speed categories.

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

Average exhaust emission rates based on VMT-weighting of emission rates for the five speed categories, with weighting factors calculated in a manner consistent with the travel time and speed assumptions used to compute average trip lengths.

TABLE N-45. SUMMARY OF TRAFFIC-RELATED OZONE PRECURSOR EMISSIONS, ALTERNATIVE D AND EMISSION RATES FOR 2010

Land Use	Amount of Development	Net Daily Vehicle Trip Generation			Average Summer Day Traffic-Related Ozone Precursor Emissions (pounds per day)			Average Daily Exhaust Plus Entrained PM10 Emissions (pounds per day)		Average Daily Traffic-Related Carbon Monoxide Emissions (pounds per day)	
		Internal Trips	External Trips	Total Trips	ROG	NOx	PM10	Summer	Winter		
FISCO AREAS 1, 2, & 3	0 EMPLOYEES	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FISCO AREAS 4 & 5	0 EMPLOYEES	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JIT AREA	343 EMPLOYEES	0	1,201	1,201	11.0	21.6	127.5	142.3	182.6		
SPRR TERMINAL	0 EMPLOYEES	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
UP RAIL TERMINAL	0 EMPLOYEES	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MARINE TERMINAL AREAS	2,923 EMPLOYEES	0	10,232	10,232	94.0	184.2	1,086.1	1,212.1	1,555.4		
ON-SITE TRUCK TRIPS	747 ACRES	6,394	0	6,394	78.3	292.2	118.7	375.5	378.0		
BAY AREA TRUCK TRIPS	747 ACRES	0	10,812	10,812	700.0	4,014.8	1,737.8	3,129.0	3,150.7		
LONG DISTANCE TRUCK TRIPS	747 ACRES	0	4,430	4,430	805.7	5,126.3	2,141.1	3,591.1	3,616.4		
Auto Trips:		0	11,433	11,433	105.0	205.9	1,213.5	1,354.4	1,738.0		
Truck Trips:		6,394	15,242	21,636	1,584.1	9,433.3	3,997.5	7,095.6	7,145.1		
Total		6,394	26,675	33,069	1,689.1	9,639.2	5,211.1	8,450.0	8,883.1		

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Different travel patterns and vehicle type mixes are assumed for employee trips and truck trips.

TABLE N-46. ESTIMATED ANNUAL VEHICLE TRAFFIC EMISSIONS, ALTERNATIVE D

Land Use	Annual Vehicle Trips	Annual VMT	Estimated Annual Vehicle Emissions (Tons Per Year) For Alternative D				
			ROG	NOx	CO	SOx	PM10
FISCO AREAS 1, 2, & 3	0	0	0.00	0.00	0.00	0.00	0.00
FISCO AREAS 4 & 5	0	0	0.00	0.00	0.00	0.00	0.00
JIT AREA	300,250	4,649,482	1.38	2.70	19.46	0.15	15.93
SPRR TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
UP RAIL TERMINAL	0	0	0.00	0.00	0.00	0.00	0.00
MARINE TERMINAL AREAS	2,558,000	39,611,175	11.74	23.03	165.82	1.31	135.76
ON-SITE TRUCK TRIPS	1,598,500	2,973,210	9.79	36.53	47.04	2.10	14.83
BAY AREA TRUCK TRIPS	2,703,000	43,539,699	87.50	501.85	392.03	30.72	217.22
LONG DISTANCE TRUCK TRIPS	1,107,500	53,644,531	100.72	640.79	449.94	37.85	267.64

Autos	2,858,250	44,260,657	13.1	25.7	185.3	1.5	151.7
Trucks	5,409,000	100,157,440	198.0	1,179.2	889.0	70.7	499.7

Total	8,267,250	144,418,097	211.1	1,204.9	1,074.3	72.1	651.4

Notes: VMT = vehicle miles traveled

ROG = reactive organic compounds

NOx = nitrogen oxides

PM10 = inhalable particulate matter

Annual emission estimates assume 250 working days per year.

Annual carbon monoxide emission estimates assume 8 months of summer emission rates and 4 months of winter emission rates.

Sulfur oxide emissions assume emission rates of 0.03 grams/vmt for passenger vehicles (Bay Area Air Quality Management District, 1996) and 0.64 grams/vmt for heavy trucks (assuming 0.05% sulfur content for diesel fuel).

TABLE N-47. SUMMARY OF TRAIN TYPE DATA USED FOR EMISSIONS ANALYSES

TRAIN TYPE	TYPICAL LENGTH (FEET)	AVERAGE GROSS TONS	# OF ENGINES	ENGINE MIX FACTOR	CHASIS MODEL	ENGINE DUTY CYCLE	DATABASE CODE	EMISSION RATE, LBS PER 1,000 TON-MILES				
								ROG	NOx	CO	SOx	PM10
AMTRAK	600	500	1	100%	F59PHI	LINE	22	0.011	0.727	0.071	0.011	0.017
AMTRAK	1200	1000	2	100%	GP40	LINE	17	0.032	0.755	0.115	0.011	0.018
SWITCHER	300	350	1	100%	SW1500	YARD	3	0.051	0.819	0.120	0.011	0.022
FREIGHT	1200	1500	2	100%	GP9	LINE	11	0.045	0.814	0.136	0.011	0.018
FREIGHT	6000	6500	4	68%	GP40	LINE	17	0.032	0.755	0.115	0.073	0.018
				32%	SD45	LINE	29	0.032	0.731	0.084	0.073	0.018
FREIGHT	7500	8000	6	68%	GP40	LINE	17	0.032	0.755	0.115	0.073	0.018
				32%	SD45	LINE	29	0.032	0.731	0.084	0.073	0.018
SEGMENT:	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY		
MILES:	49	56	6	3.5	4	1.5	2	62	43	77		

Notes: SOx emission rates assume 0.05% sulfur for Amtrak, yard, and local freight locomotives, and 0.32% sulfur for long haul freight locomotives.

TABLE N-48. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, NO ACTION ALTERNATIVE

TRAIN TYPE	DAILY TRAIN NUMBERS BY RAIL SEGMENT, NO ACTION									
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			4			4	4		2	2
FR6000	9	9	17		17	4	4	4		
TOTAL	25	17	47	26	17	48	20	4	14	2

TRAIN TYPE	DAILY THOUSANDS OF TON-MILES BY RAIL SEGMENT, NO ACTION										TOTAL FOR ALL SEGMENTS
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	294	224	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98	0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0	0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0	0	12.0	0.0	0.0	3.0	4.0	0.0	43.0	49.0	111.0
FR6000	220.5	252	51.0	0.0	34.0	3.0	4.0	124.0	0.0	0.0	688.5
TOTAL	612.5	476	141.0	45.5	34.0	36.0	20.0	124.0	301.0	49.0	1,839.0

TABLE N-49. RAIL TRAFFIC EMISSIONS FOR THE NO ACTION ALTERNATIVE

TRAIN TYPE	ANNUAL ROG EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, NO ACTION ALTERNATIVE										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	199	0	0	50	66	0	713	813	0.92
FR6000	2,558	2,924	592	0	394	35	46	1,439	0	0	3.99
TOTALS	4,894	3,840	1,287	290	394	263	177	1,439	2,090	813	7.74

TRAIN TYPE	ANNUAL NO _x EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, NO ACTION ALTERNATIVE										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	3,563	0	0	891	1,188	0	12,768	14,550	16.48
FR6000	60,173	68,769	13,918	0	9,278	819	1,092	33,839	0	0	93.94
TOTALS	165,250	128,241	38,512	12,268	9,278	9,751	5,486	33,839	81,706	14,550	249.44

TABLE N-49. RAIL TRAFFIC EMISSIONS FOR THE NO ACTION ALTERNATIVE

TRAIN TYPE	ANNUAL CO EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, NO ACTION ALTERNATIVE										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	598	0	0	149	199	0	2,142	2,441	2.76
FR6000	8,457	9,666	1,956	0	1,304	115	153	4,756	0	0	13.20
TOTALS	20,202	15,485	4,878	1,356	1,304	1,163	696	4,756	9,529	2,441	30.91

TRAIN TYPE	ANNUAL SO _x EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, NO ACTION ALTERNATIVE										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	50	0	0	13	17	0	180	205	0.23
FR6000	5,905	6,749	1,366	0	911	80	107	3,321	0	0	9.22
TOTALS	7,546	7,686	1,743	190	911	218	174	3,321	1,260	205	11.63

TABLE N-49. RAIL TRAFFIC EMISSIONS FOR THE NO ACTION ALTERNATIVE

TRAIN TYPE	ANNUAL PM10 EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, NO ACTION ALTERNATIVE										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	80	0	0	20	27	0	285	325	0.37
FR6000	1,457	1,665	337	0	225	20	26	819	0	0	2.27
TOTALS	3,952	3,071	921	294	225	231	129	819	1,919	325	5.94

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

CO = carbon monoxide

SOx = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

GILROY = rail segment from Fruitvale to the San Benito County Line

TABLE N-50. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE A

TRAIN TYPE	DAILY TRAIN NUMBERS BY RAIL SEGMENT, ALTERNATIVE A									
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	13	13	26		26	4	4	4		
TOTAL	29	21	54	26	26	48	20	4	14	2

TRAIN TYPE	DAILY THOUSANDS OF TON-MILES BY RAIL SEGMENT, ALTERNATIVE A										TOTAL FOR ALL SEGMENTS
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	318.5	364.0	78.0	0.0	52.0	3.0	4.0	124.0	0.0	0.0	943.5
TOTAL	710.5	588.0	162.0	45.5	52.0	36.0	20.0	124.0	301.0	77.0	2,116.0

TABLE N-51. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE A

TRAIN TYPE	ANNUAL ROG EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE A										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	3,695	4,223	905	0	603	35	46	1,439	0	0	5.47
TOTALS	6,031	5,139	1,501	290	603	263	177	1,439	2,090	1,277	9.41

TRAIN TYPE	ANNUAL NO _x EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE A										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	22,864	19.75
FR6000	86,917	99,333	21,286	0	14,190	819	1,092	33,839	0	0	128.74
TOTALS	191,994	158,805	44,099	12,268	14,190	9,751	5,486	33,839	81,706	22,864	287.50

TABLE N-51. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE A

TRAIN TYPE	ANNUAL CO EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE A										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	12,216	13,962	2,992	0	1,995	115	153	4,756	0	0	18.09
TOTALS	23,961	19,781	5,615	1,356	1,995	1,163	696	4,756	9,529	3,835	36.34

TRAIN TYPE	ANNUAL SOx EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE A										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	25	0	0	13	17	0	180	322	0.28
FR6000	8,530	9,749	2,089	0	1,393	80	107	3,321	0	0	12.63
TOTALS	10,171	10,686	2,441	190	1,393	218	174	3,321	1,260	322	15.09

TABLE N-51. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE A

TRAIN TYPE	ANNUAL PM10 EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE A										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	40	0	0	20	27	0	285	510	0.44
FR6000	2,104	2,405	515	0	344	20	26	819	0	0	3.12
TOTALS	4,599	3,811	1,059	294	344	231	129	819	1,919	510	6.86

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

CO = carbon monoxide

SOx = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

GILROY = rail segment from Fruitvale to the San Benito County Line

TABLE N-52. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE B

TRAIN TYPE	DAILY TRAIN NUMBERS BY RAIL SEGMENT, ALTERNATIVE B									
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	10	10	20		20	4	4	4		
TOTAL	26	18	48	26	20	48	20	4	14	2

TRAIN TYPE	DAILY THOUSANDS OF TON-MILES BY RAIL SEGMENT, ALTERNATIVE B										TOTAL FOR ALL SEGMENTS
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	245.0	280.0	60.0	0.0	40.0	3.0	4.0	124.0	0.0	0.0	756.0
TOTAL	637.0	504.0	144.0	45.5	40.0	36.0	20.0	124.0	301.0	77.0	1,928.5

TABLE N-53. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE B

TRAIN TYPE	ANNUAL ROG EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE B										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	2,843	3,249	696	0	464	35	46	1,439	0	0	4.39
TOTALS	5,178	4,165	1,292	290	464	263	177	1,439	2,090	1,277	8.32

TRAIN TYPE	ANNUAL NO _x EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE B										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	22,864	19.75
FR6000	66,859	76,410	16,374	0	10,916	819	1,092	33,839	0	0	103.15
TOTALS	171,936	135,882	39,187	12,268	10,916	9,751	5,486	33,839	81,706	22,864	261.92

TABLE N-53. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE B

TRAIN TYPE	ANNUAL CO EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE B										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	9,397	10,740	2,301	0	1,534	115	153	4,756	0	0	14.50
TOTALS	21,142	16,559	4,924	1,356	1,534	1,163	696	4,756	9,529	3,835	32.75

TRAIN TYPE	ANNUAL SOx EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE B										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	25	0	0	13	17	0	180	322	0.28
FR6000	6,562	7,499	1,607	0	1,071	80	107	3,321	0	0	10.12
TOTALS	8,202	8,436	1,958	190	1,071	218	174	3,321	1,260	322	12.58

TABLE N-53. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE B

TRAIN TYPE	ANNUAL PM10 EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE B										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	40	0	0	20	27	0	285	510	0.44
FR6000	1,619	1,850	396	0	264	20	26	819	0	0	2.50
TOTALS	4,114	3,256	940	294	264	231	129	819	1,919	510	6.24

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

CO = carbon monoxide

SOx = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

GILROY = rail segment from Fruitvale to the San Benito County Line

TABLE N-54. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE C

TRAIN TYPE	DAILY TRAIN NUMBERS BY RAIL SEGMENT, ALTERNATIVE C									
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	14	13	27		27	4	4	4		
TOTAL	30	21	55	26	27	48	20	4	14	2

TRAIN TYPE	DAILY THOUSANDS OF TON-MILES BY RAIL SEGMENT, ALTERNATIVE C										TOTAL FOR ALL SEGMENTS
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	343.0	364.0	81.0	0.0	54.0	3.0	4.0	124.0	0.0	0.0	973.0
TOTAL	735.0	588.0	165.0	45.5	54.0	36.0	20.0	124.0	301.0	77.0	2,145.5

TABLE N-55. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE C

TRAIN TYPE	ANNUAL ROG EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE C										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	3,980	4,223	940	0	627	35	46	1,439	0	0	5.64
TOTALS	6,315	5,139	1,536	290	627	263	177	1,439	2,090	1,277	9.58

TRAIN TYPE	ANNUAL NOx EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE C										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	22,864	19.75
FR6000	93,603	99,333	22,104	0	14,736	819	1,092	33,839	0	0	132.76
TOTALS	198,680	158,805	44,917	12,268	14,736	9,751	5,486	33,839	81,706	22,864	291.53

TABLE N-55. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE C

TRAIN TYPE	ANNUAL CO EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE C										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	13,156	13,962	3,107	0	2,071	115	153	4,756	0	0	18.66
TOTALS	24,901	19,781	5,730	1,356	2,071	1,163	696	4,756	9,529	3,835	36.91

TRAIN TYPE	ANNUAL SO _x EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE C										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	25	0	0	13	17	0	180	322	0.28
FR6000	9,186	9,749	2,169	0	1,446	80	107	3,321	0	0	13.03
TOTALS	10,827	10,686	2,521	190	1,446	218	174	3,321	1,260	322	15.48

TABLE N-55. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE C

TRAIN TYPE	ANNUAL PM10 EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE C										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	40	0	0	20	27	0	285	510	0.44
FR6000	2,266	2,405	535	0	357	20	26	819	0	0	3.21
TOTALS	4,761	3,811	1,079	294	357	231	129	819	1,919	510	6.96

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

CO = carbon monoxide

SOx = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

GILROY = rail segment from Fruitvale to the San Benito County Line

TABLE N-56. RAIL TRAFFIC DATA USED FOR EMISSIONS ANALYSES, ALTERNATIVE D

TRAIN TYPE	DAILY TRAIN NUMBERS BY RAIL SEGMENT, ALTERNATIVE D									
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY
AMT600	12	8	20	20		30	10		10	
AMT1200	4		4	4		10	2		2	
SW300			2	2						
FR1200			2			4	4		2	2
FR6000	14	13	27		27	4	4	4		
TOTAL	30	21	55	26	27	48	20	4	14	2

TRAIN TYPE	DAILY THOUSANDS OF TON-MILES BY RAIL SEGMENT, ALTERNATIVE D										TOTAL FOR ALL SEGMENTS
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	294.0	224.0	60.0	35.0	0.0	22.5	10.0	0.0	215.0	0.0	860.5
AMT1200	98.0	0.0	12.0	7.0	0.0	7.5	2.0	0.0	43.0	0.0	169.5
SW300	0.0	0.0	6.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	9.5
FR1200	0.0	0.0	6.0	0.0	0.0	3.0	4.0	0.0	43.0	77.0	133.0
FR6000	343.0	364.0	81.0	0.0	54.0	3.0	4.0	124.0	0.0	0.0	973.0
TOTAL	735.0	588.0	165.0	45.5	54.0	36.0	20.0	124.0	301.0	77.0	2,145.5

TABLE N-57. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE D

TRAIN TYPE	ANNUAL ROG EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE D										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,202	916	245	143	0	92	41	0	879	0	1.76
AMT1200	1,133	0	139	81	0	87	23	0	497	0	0.98
SW300	0	0	113	66	0	0	0	0	0	0	0.09
FR1200	0	0	100	0	0	50	66	0	713	1,277	1.10
FR6000	3,980	4,223	940	0	627	35	46	1,439	0	0	5.64
TOTALS	6,315	5,139	1,536	290	627	263	177	1,439	2,090	1,277	9.58

TRAIN TYPE	ANNUAL NO _x EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE D										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	78,056	59,471	15,930	9,292	0	5,974	2,655	0	57,082	0	114.23
AMT1200	27,021	0	3,309	1,930	0	2,068	551	0	11,856	0	23.37
SW300	0	0	1,793	1,046	0	0	0	0	0	0	1.42
FR1200	0	0	1,782	0	0	891	1,188	0	12,768	22,864	19.75
FR6000	93,603	99,333	22,104	0	14,736	819	1,092	33,839	0	0	132.76
TOTALS	198,680	158,805	44,917	12,268	14,736	9,751	5,486	33,839	81,706	22,864	291.53

TABLE N-57. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE D

TRAIN TYPE	ANNUAL CO EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE D										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	7,638	5,820	1,559	909	0	585	260	0	5,586	0	11.18
AMT1200	4,107	0	503	293	0	314	84	0	1,802	0	3.55
SW300	0	0	262	153	0	0	0	0	0	0	0.21
FR1200	0	0	299	0	0	149	199	0	2,142	3,835	3.31
FR6000	13,156	13,962	3,107	0	2,071	115	153	4,756	0	0	18.66
TOTALS	24,901	19,781	5,730	1,356	2,071	1,163	696	4,756	9,529	3,835	36.91

TRAIN TYPE	ANNUAL SO _x EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE D										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,230	937	251	146	0	94	42	0	900	0	1.80
AMT1200	410	0	50	29	0	31	8	0	180	0	0.35
SW300	0	0	25	15	0	0	0	0	0	0	0.02
FR1200	0	0	25	0	0	13	17	0	180	322	0.28
FR6000	9,186	9,749	2,169	0	1,446	80	107	3,321	0	0	13.03
TOTALS	10,827	10,686	2,521	190	1,446	218	174	3,321	1,260	322	15.48

TABLE N-57. RAIL TRAFFIC EMISSIONS FOR ALTERNATIVE D

TRAIN TYPE	ANNUAL PM10 EMISSIONS (POUNDS/YEAR) BY RAIL SEGMENT, ALTERNATIVE D										TOTAL TONS/YR
	A-SAC	A-SJ	B	C/D	JIT	E	F	LATHROP	SAN JOSE	GILROY	
AMT600	1,845	1,406	377	220	0	141	63	0	1,350	0	2.70
AMT1200	649	0	80	46	0	50	13	0	285	0	0.56
SW300	0	0	48	28	0	0	0	0	0	0	0.04
FR1200	0	0	40	0	0	20	27	0	285	510	0.44
FR6000	2,266	2,405	535	0	357	20	26	819	0	0	3.21
TOTALS	4,761	3,811	1,079	294	357	231	129	819	1,919	510	6.96

Notes: ROG = reactive organic compounds

NOx = nitrogen oxides

CO = carbon monoxide

SOx = sulfur oxides

PM10 = inhalable particulate matter

A-SAC = rail segment from Stege (Richmond) to El Mira (Solano County)

A-SJ = rail segment from Stege (Richmond) to San Joaquin County line via Antioch

B = rail segment between Stege (Richmond) and the Desert Yard (Oakland)

C/D = main line rail segment through the Desert Yard and West Oakland yard to Jack London Square

JIT = West Oakland rail yard and Joint Intermodal Terminal rail segments

E = rail segment through Jack London Square

F = rail segment from Jack London Square to Fruitvale

LATHROP = rail segment from Fruitvale to San Joaquin County line via Livermore

SAN JOSE = rail segment from Fruitvale to the San Jose area

GILROY = rail segment from Fruitvale to the San Benito County Line

TABLE N-58. EMISSIONS FROM PORT OF OAKLAND RAIL TRAFFIC

ALTERNATIVE	ANNUAL BAY AREA EMISSIONS, TONS/YEAR				
	ROG	NOx	CO	SOx	PM10
NO ACTION	7.74	249.44	30.91	11.63	5.94
ALTERNATIVE A	9.41	287.50	36.34	15.09	6.86
ALTERNATIVE B	8.32	261.92	32.75	12.58	6.24
ALTERNATIVE C	9.58	291.53	36.91	15.48	6.96
ALTERNATIVE D	9.58	291.53	36.91	15.48	6.96
.....					
	NET INCREASE IN BAY AREA EMISSIONS, TONS/YEAR				
	ROG	NOx	CO	SOx	PM10
ALTERNATIVE A	1.66	38.06	5.44	3.46	0.92
ALTERNATIVE B	0.57	12.48	1.84	0.95	0.30
ALTERNATIVE C	1.83	42.09	6.00	3.86	1.01
ALTERNATIVE D	1.83	42.09	6.00	3.86	1.01

Notes: ROG = reactive organic compounds
 NOx = nitrogen oxides
 CO = carbon monoxide
 SOx = sulfur oxides
 PM10 = inhalable particulate matter

TABLE N-59. PORT OF OAKLAND SHIP CALL PROFILE

Type of Vessel	Steam or Diesel	Vessel Tonnage (1,000 DWT)	Percent of 1991 Vessel Calls	Percent of 2010 Vessel Calls	Mean Hours Moored	100% Power Fuel Use (gal/hr)
Container Ships	Diesel	0 - 25	17.8%	6.3%	30.6	355
		25 - 50	37.0%	41.1%	30.6	486
		50 - 75	6.6%	12.6%	33.0	649
		75 - 100	1.9%	3.2%	35.4	797
		100+	0.0%	0.0%		960
	Steam	0 - 25	1.2%	1.2%	30.6	789
		25 - 50	7.0%	7.0%	30.6	887
		50 - 75	0.9%	0.9%	30.6	1,008
		75 - 100	0.0%	0.0%		1,117
		100+	0.0%	0.0%		1,239
Tankers & Bulk Carriers	Diesel	0 - 25	4.2%	4.2%	25.8	2,064
		25 - 50	5.9%	5.9%	45.0	4,194
		50 - 75	0.7%	0.7%	49.8	6,857
		75 - 100	0.5%	0.5%	45.0	9,253
		100+	0.0%	0.0%		11,916
	Steam	0 - 25	0.5%	0.5%	25.8	789
		25 - 50	2.8%	2.8%	37.8	887
		50 - 75	0.9%	0.9%	49.8	1,008
		75 - 100	1.4%	1.4%	45.0	1,117
		100+	0.0%	0.0%		1,239
General Cargo, Vehicle Carriers, RO-RO/Lash, Ocean Tugs	Diesel	0 - 25	7.0%	7.0%	53.4	355
		25 - 50	1.9%	1.9%	72.6	486
		50 - 75	1.9%	1.9%	72.6	649
		75 - 100	0.0%	0.0%		797
		100+	0.0%	0.0%		960

Notes: 1991 vessel call data from California Air Resources Board, 1991.
 Future vessel tonnage class estimates assume that diesel
 container ship sizes will increase.

TABLE N-60. EMISSION RATE DATA FOR MARINE VESSELS

Vessel Type and Power Setting	Port of Oakland		Emission Rate, Lbs per 1,000 Gallons of Fuel				
	Time In Mode (hours)	Average Fuel Use Factor					
			ROG	NOx	CO	SOx	PM10
Steam Boiler Propulsion							
Full Throttle	1.7	80%	1.72	63.6	7.27	318	56.5
Half Throttle	0.4	40%	0.682	55.8	3.45	318	20
One-Third/Slow	0.6	20%	0.682	55.8	3.45	318	20
Hotelling							
Bunker Fuel		10%	3.2	36.4	0	318	10
Distillate Oil		10%	3	22.2	4	113.6	15
Marine Diesel Propulsion							
Full Throttle	1.7	80%	24	550	61	125.6	33
Half Throttle	0.4	40%	24	550	61	125.6	33
One-Third/Slow	0.6	20%	24	550	61	125.6	33

			Emission Rate, Pounds per Hour of Use				
Diesel Generators			ROG	NOx	CO	SOx	PM10
500 kW			0.49	15.43	3.53	1.08	0.36

Notes: Fuel sulfur content assumed to be 2% for bunker fuels, 0.8% for marine diesel and distillate fuels, and 0.2% for diesel generator fuels.
 About 80% of steam ship hotelling uses distillate fuels, 20% uses bunker fuels.
 The typical generator size for marine diesel vessels is 500 kW.
 Emission rates for diesel generators based on AP-42, Supplement F, section 3.4.

TABLE N-61. MARINE VESSEL EMISSIONS FOR THE NO ACTION ALTERNATIVE

Type of Vessel	Steam or Diesel	Vessel Tonnage (1,000 DWT)	Annual Ship Calls	No Action Alternative Annual Bay Area Emissions, Tons/Year				
				ROG	NOx	CO	SOx	PM10
Container Ships	Diesel	0 - 25	67	1.43	37.27	6.00	6.01	1.65
		25 - 50	433	11.50	292.05	44.42	50.53	13.76
		50 - 75	133	4.46	111.72	16.38	20.16	5.46
		75 - 100	33	1.32	32.74	4.69	6.05	1.63
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	12	0.07	1.33	0.15	7.18	0.98
		25 - 50	74	0.47	9.22	1.03	49.75	6.82
		50 - 75	10	0.07	1.42	0.16	7.64	1.05
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Tankers & Bulk Carriers	Diesel	0 - 25	44	3.85	90.68	11.09	19.32	5.12
		25 - 50	62	10.91	256.07	30.93	55.07	14.57
		50 - 75	7	1.97	45.98	5.42	10.08	2.66
		75 - 100	5	1.88	43.47	5.03	9.65	2.54
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	5	0.03	0.53	0.06	2.84	0.40
		25 - 50	30	0.22	3.98	0.45	21.65	2.90
		50 - 75	10	0.10	1.66	0.19	9.13	1.18
		75 - 100	15	0.16	2.65	0.30	14.56	1.91
		100+	0	0.00	0.00	0.00	0.00	0.00
General Cargo, Vehicle Carriers, RO-RO/Lash, Ocean Tugs	Diesel	0 - 25	74	1.99	54.19	9.60	7.55	2.13
		25 - 50	20	0.73	19.97	3.53	2.79	0.79
		50 - 75	20	0.86	22.91	3.86	3.46	0.96
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Container Ships			762	19.3	485.8	72.8	147.3	31.4
Bulk Carriers			178	19.1	445.0	53.5	142.3	31.3
General Cargo			114	3.6	97.1	17.0	13.8	3.9
----- Total			1,054	42.0	1,027.8	143.3	303.4	66.5

TABLE N-62. MARINE VESSEL EMISSIONS FOR ALTERNATIVE A

Type of Vessel	Steam or Diesel	Vessel Tonnage (1,000 DWT)	Annual Ship Calls	Alternative A Annual Bay Area Emissions, Tons/Year				
				ROG	NOx	CO	SOx	PM10
Container Ships	Diesel	0 - 25	104	2.22	57.86	9.31	9.33	2.57
		25 - 50	673	17.87	453.93	69.04	78.54	21.39
		50 - 75	207	6.94	173.89	25.49	31.38	8.50
		75 - 100	52	2.08	51.59	7.39	9.54	2.57
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	19	0.11	2.11	0.24	11.36	1.56
		25 - 50	115	0.73	14.32	1.61	77.31	10.59
		50 - 75	15	0.11	2.12	0.24	11.46	1.57
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Tankers & Bulk Carriers	Diesel	0 - 25	69	6.04	142.20	17.39	30.30	8.03
		25 - 50	96	16.89	396.50	47.90	85.28	22.56
		50 - 75	12	3.38	78.83	9.29	17.27	4.56
		75 - 100	8	3.00	69.55	8.04	15.44	4.07
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	8	0.04	0.85	0.09	4.55	0.63
		25 - 50	46	0.34	6.10	0.69	33.19	4.44
		50 - 75	15	0.15	2.49	0.28	13.70	1.77
		75 - 100	23	0.24	4.07	0.46	22.33	2.93
		100+	0	0.00	0.00	0.00	0.00	0.00
General Cargo, Vehicle Carriers, RO-RO/Lash, Ocean Tugs	Diesel	0 - 25	115	3.10	84.21	14.92	11.74	3.31
		25 - 50	31	1.14	30.96	5.48	4.32	1.22
		50 - 75	31	1.34	35.51	5.98	5.36	1.49
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Container Ships			1,185	30.1	755.8	113.3	228.9	48.8
Bulk Carriers			277	30.1	700.6	84.1	222.1	49.0
General Cargo			177	5.6	150.7	26.4	21.4	6.0
-----			-----	-----	-----	-----	-----	-----
Total			1,639	65.7	1,607.1	223.8	472.4	103.8

TABLE N-63. MARINE VESSEL EMISSIONS FOR ALTERNATIVE B

Type of Vessel	Steam or Diesel	Vessel Tonnage (1,000 DWT)	Annual Ship Calls	Alternative B Annual Bay Area Emissions, Tons/Year				
				ROG	NOx	CO	SOx	PM10
Container Ships	Diesel	0 - 25	84	1.80	46.73	7.52	7.54	2.07
		25 - 50	545	14.47	367.60	55.91	63.60	17.32
		50 - 75	168	5.64	141.13	20.69	25.47	6.89
		75 - 100	42	1.68	41.67	5.97	7.70	2.08
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	16	0.09	1.77	0.20	9.57	1.31
		25 - 50	93	0.59	11.58	1.30	62.52	8.57
		50 - 75	12	0.09	1.70	0.19	9.17	1.26
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Tankers & Bulk Carriers	Diesel	0 - 25	56	4.90	115.41	14.11	24.59	6.51
		25 - 50	78	13.73	322.16	38.92	69.29	18.33
		50 - 75	9	2.54	59.12	6.96	12.95	3.42
		75 - 100	6	2.25	52.16	6.03	11.58	3.05
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	6	0.03	0.64	0.07	3.41	0.48
		25 - 50	37	0.27	4.90	0.55	26.70	3.57
		50 - 75	12	0.12	1.99	0.23	10.96	1.42
		75 - 100	19	0.20	3.36	0.38	18.44	2.42
		100+	0	0.00	0.00	0.00	0.00	0.00
General Cargo, Vehicle Carriers, RO-RO/Lash, Ocean Tugs	Diesel	0 - 25	93	2.50	68.10	12.06	9.49	2.68
		25 - 50	25	0.92	24.96	4.42	3.49	0.98
		50 - 75	25	1.08	28.64	4.82	4.33	1.20
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Container Ships			960	24.4	612.2	91.8	185.6	39.5
Bulk Carriers			223	24.0	559.7	67.3	177.9	39.2
General Cargo			143	4.5	121.7	21.3	17.3	4.9
----- Total			1,326	52.9	1,293.6	180.3	380.8	83.6

TABLE N-64. MARINE VESSEL EMISSIONS FOR ALTERNATIVE C

Type of Vessel	Steam or Diesel	Vessel Tonnage (1,000 DWT)	Annual Ship Calls	Alternative C Annual Bay Area Emissions, Tons/Year				
				ROG	NOx	CO	SOx	PM10
Container Ships	Diesel	0 - 25	108	2.31	60.08	9.66	9.69	2.67
		25 - 50	700	18.58	472.14	71.81	81.69	22.25
		50 - 75	215	7.21	180.61	26.47	32.59	8.82
		75 - 100	54	2.16	53.57	7.68	9.90	2.67
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	20	0.11	2.22	0.25	11.96	1.64
		25 - 50	120	0.76	14.95	1.68	80.67	11.05
		50 - 75	16	0.12	2.26	0.25	12.22	1.68
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Tankers & Bulk Carriers	Diesel	0 - 25	72	6.30	148.38	18.14	31.62	8.38
		25 - 50	100	17.60	413.02	49.89	88.83	23.50
		50 - 75	12	3.38	78.83	9.29	17.27	4.56
		75 - 100	8	3.00	69.55	8.04	15.44	4.07
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	8	0.04	0.85	0.09	4.55	0.63
		25 - 50	48	0.35	6.36	0.72	34.64	4.64
		50 - 75	16	0.16	2.65	0.30	14.61	1.89
		75 - 100	24	0.25	4.25	0.48	23.30	3.05
		100+	0	0.00	0.00	0.00	0.00	0.00
General Cargo, Vehicle Carriers, RO-RO/Lash, Ocean Tugs	Diesel	0 - 25	120	3.23	87.87	15.56	12.25	3.45
		25 - 50	32	1.18	31.95	5.65	4.46	1.26
		50 - 75	32	1.38	36.66	6.18	5.54	1.54
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Container Ships			1,233	31.3	785.8	117.8	238.7	50.8
Bulk Carriers			288	31.1	723.9	87.0	230.3	50.7
General Cargo			184	5.8	156.5	27.4	22.3	6.3
-----			-----	-----	-----	-----	-----	-----
Total			1,705	68.1	1,666.2	232.2	491.2	107.8

TABLE N-65. MARINE VESSEL EMISSIONS FOR ALTERNATIVE D

Type of Vessel	Steam or Diesel	Vessel Tonnage (1,000 DWT)	Annual Ship Calls	Alternative D Annual Bay Area Emissions, Tons/Year				
				ROG	NOx	CO	SOx	PM10
Container Ships	Diesel	0 - 25	106	2.27	58.97	9.49	9.51	2.62
		25 - 50	690	18.32	465.40	70.79	80.53	21.93
		50 - 75	212	7.11	178.09	26.10	32.14	8.70
		75 - 100	53	2.12	52.58	7.53	9.72	2.62
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	20	0.11	2.22	0.25	11.96	1.64
		25 - 50	118	0.75	14.70	1.65	79.32	10.87
		50 - 75	16	0.12	2.26	0.25	12.22	1.68
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Tankers & Bulk Carriers	Diesel	0 - 25	71	6.21	146.32	17.89	31.18	8.26
		25 - 50	98	17.25	404.76	48.90	87.05	23.03
		50 - 75	12	3.38	78.83	9.29	17.27	4.56
		75 - 100	8	3.00	69.55	8.04	15.44	4.07
		100+	0	0.00	0.00	0.00	0.00	0.00
	Steam	0 - 25	8	0.04	0.85	0.09	4.55	0.63
		25 - 50	47	0.35	6.23	0.70	33.91	4.54
		50 - 75	16	0.16	2.65	0.30	14.61	1.89
		75 - 100	24	0.25	4.25	0.48	23.30	3.05
		100+	0	0.00	0.00	0.00	0.00	0.00
General Cargo, Vehicle Carriers, RO-RO/Lash, Ocean Tugs	Diesel	0 - 25	118	3.18	86.41	15.30	12.05	3.40
		25 - 50	31	1.14	30.96	5.48	4.32	1.22
		50 - 75	31	1.34	35.51	5.98	5.36	1.49
		75 - 100	0	0.00	0.00	0.00	0.00	0.00
		100+	0	0.00	0.00	0.00	0.00	0.00
Container Ships			1,215	30.8	774.2	116.1	235.4	50.1
Bulk Carriers			284	30.6	713.4	85.7	227.3	50.0
General Cargo			180	5.7	152.9	26.8	21.7	6.1
----- Total			----- 1,679	----- 67.1	----- 1,640.5	----- 228.5	----- 484.5	----- 106.2

TABLE N-66. SUMMARY OF MARINE VESSEL EMISSION ESTIMATES

Alternative	Annual Ship Calls	Annual Bay Area Emissions, Tons/Year				
		ROG	NOx	CO	SOx	PM10
No Action	1,054	42.0	1,027.8	143.3	303.4	66.5
Alternative A	1,639	65.7	1,607.1	223.8	472.4	103.8
Alternative B	1,326	52.9	1,293.6	180.3	380.8	83.6
Alternative C	1,705	68.1	1,666.2	232.2	491.2	107.8
Alternative D	1,679	67.1	1,640.5	228.5	484.5	106.2

		Net Increase in Bay Area Emissions, Tons/Year				
		ROG	NOx	CO	SOx	PM10
Alternative A		23.7	579.2	80.5	169.0	37.3
Alternative B		10.9	265.8	37.1	77.4	17.1
Alternative C		26.1	638.4	88.9	187.8	41.2
Alternative D		25.1	612.7	85.2	181.0	39.7